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INDIA IN 1929-30.

CHAPTER I.

Some outstanding Events.

Before the reader is required to settle down to the detailed pedestrian examination of Indian problems that awaits him in subsequent Chapters, it seems advisable, and previous editions of this Report have also made it customary, to attempt to give him a bird's eye view of the year's events as a whole, although it will be readily understood that this will necessitate a somewhat drastic compression of facts here, and a recapitulation of many of them in subsequent parts of the volume.

Unquestionably the outstanding feature of the period under review has been the problem of India's constitutional future. The existence of the Statutory Commission, its composition and activities, and the reactions which it has evoked, have profoundly influenced the whole situation. At the conclusion of the year covered by the previous edition of this Report the Commission was still pursuing its investigations in India, and despite the boycott declared upon it by several groups of Indian political opinion as soon as its composition was announced, a large number of prominent individuals and representative bodies had appeared to give evidence before it. On the 14th of April it concluded its labours in this country and sailed for England, and during the course of the summer devoted itself to examining, in consultation with the members of the Central Committee and other important persons, the mass of material which it had collected in India. Meanwhile the Auxiliary Committee to the main Statutory body, which had been constituted under the Chairmanship of Sir Philip Hartog to review the growth of education in British India, had been completing its work, and in September it published its Report. And the issue during the latter part of the year of the reports of the Central Committee and the various Provincial Committees, (whose origin and functions will be explained a few pages hence), marked yet another step towards the completion of the Inquiry as it had been conceived when the Commission first arrived in India.

On the 31st of October, however, a new factor was introduced into the situation by the Gazette Extraordinary issued by H. E. the Viceroy on his return from his four months' stay in England.*

* This is reproduced *verbatim* in Appendix II.

It had been widely known that Lord Irwin was anxious during his absence from India to devise some means whereby the constitutional question might be clarified, and a greater degree of co-operation be obtained from all sections of Indian political opinion, before Parliament was asked to pronounce upon whatever scheme of reforms might be laid before it as a result of the Statutory Inquiry; and in consequence the issue of some statement of policy on his return was eagerly awaited. In essence the announcement may be said to have consisted in the recognition (which had of course been at least implicit in previous official proclamations) that the ultimate and logical goal of Indian political aspirations is the attainment of Dominion Status, and the declaration that after the Statutory Commission's Report had been published a Round Table Conference would be held, in order that full and adequate expression of Indian views might be obtained before proposals for the future government of the country were laid before the British Parliament.

The reception of this announcement in India was at first encouraging, and on the 2nd of November the more prominent of the political leaders who had refused to co-operate with the Statutory Commission, as well as representatives of practically every other group, put their signatures to a manifesto which, it was hoped, indicated their intention to co-operate in the settlement of India's political problems. But during the next two months a variety of factors had conspired to alter this more genial atmosphere, and by the end of December a considerable proportion of the politically-minded classes was again committed to the policy of boycott and Non-Co-operation. Most of the moderate politicians, however, approved the Viceroy's declaration, and despite subsequent developments have remained convinced that the interests of India can best be served by co-operation rather than obstruction. The opposition was mainly represented by the Congress, and at the annual session held in Lahore towards the end of December, resolutions were passed in favour of complete independence for India and of immediate preparation for a campaign of civil disobedience. From that time onwards there was a steady deterioration in the political atmosphere, and by the end of March it was clear that the Congress intended to pursue a programme of mass disobedience to the law. The signal for the campaign was given when Mr. Gandhi, who had been armed with dictatorial powers by

the Working Committee of the Congress, started his march to the sea in order to defy the Salt Laws.

Apart from the debates on Indian affairs in Parliament during the last six months of our period, and the comments thereon in the Press, events in Great Britain aroused more interest in India than they had done since 1926. First we may mention the general satisfaction which was felt and expressed throughout the whole country at the gradual restoration to health of His Majesty the King. Another matter which naturally attracted a great deal of attention, primarily because of the effect it might possibly have upon the solution of the Indian constitutional question, was the fall of the Conservative Government in the General Election in May, and the establishment of a Labour Ministry under Mr. MacDonald, with Mr. Benn as Secretary of State for India. The economic depression in Great Britain also aroused considerable interest, as evidence of the world-wide slump in commodity prices by which India herself was seriously effected.

A general description of the work accomplished in the Central Legislature will be found in Chapter III, but the Sessions of the Assembly were distinguished by a few exceptional events which deserve mention here. The period under review opened with a continuance of the controversy over the Public Safety Bill, which was briefly mentioned in last year's Report. This Bill, which was designed to curb communist activities in India, was first introduced into the Assembly in September 1928, and rejected after four days' discussion by the narrowest possible margin,—that is, by the President's casting vote. In January, 1929, it was brought forward again in revised form, and after a series of protected debates was ruled out of order by the President on the 11th of April. A few days later, however, the principles of the Bill were given the force of law by an Ordinance promulgated by Lord Irwin as Governor-General.

Several other measures, such as the Trades Disputes Bill, caused considerable tension during the earlier part of the year, and the situation was further complicated during the summer by a resolution passed by the Working Committee of the Congress Party, calling upon its representatives in the Legislatures to resign their seats as a protest against the Viceroy's decision to prolong the life of the Assembly beyond its normal term,—a decision which was based on the undesirability of requiring the electorate

to return fresh representatives at a time when the issue of the Statutory Commission's report was shortly expected. It was at once apparent that a considerable number of Congressmen, remembering the state of isolation to which their party had been reduced by their boycott of the Legislatures from 1921 to 1923, did not consider the postponement of the Dissolution an adequate reason for resigning. But it was not until the 26th of July, when the Working Committee of the Party decided to defer the whole question until after the plenary meeting of the Congress in December, that the uncertainty whether the Autumn Session of the Assembly would contain its full complement of members was finally removed. The tranquillity of this Session was disturbed by the controversy over the Hunger Strike Bill, which will be shortly described, and by the death of one of the hunger strikers while the Bill was under discussion. And in January, after the Congress had met at Lahore, the step to which considerable opposition had been advanced during the summer was adopted, and 27* members of the Assembly resigned. But despite the absence of the more active and extreme section of the Opposition, the atmosphere of the Spring Session was far from genial, and the passage of the Cotton Textile Industry (Protection) Bill, which was alleged by many of its opponents to represent the enforcement upon India of Imperial Preference in violation of the spirit of the Fiscal Convention, resulted in the resignation of certain members of the Nationalist Party headed by Pandit Malaviya.

A feature of the year under review was the number of investigations, apart from the main Statutory Inquiry, which were in progress upon matters of public importance. The reports of the Auxiliary Committee appointed by the Statutory Commission, and of the Central and Provincial Committees set up by the Indian Legislatures, have already been briefly referred to. It should be explained that the constitution of the Central Committee differed from that of the several Provincial Committees. When the composition of the Statutory Commission was announced, the Legislative Assembly passed a resolution that it "would have nothing to do with the Commission at any stage or in any form". The Council of State, however, decided upon co-operation, and accordingly four members of it, together with five members of the Legislative Assembly, were nominated to constitute a Committee

*7 of whom, however, sought and obtained re-election afterwards.

whose functions were to investigate from the Indian side the material submitted to the Commission. Facilities were granted to this Committee, as also to the Committees established by the Provincial Councils,—all of which, except that of the Central Provinces, voted against boycott of the Commission,—to publish independent reports of their own; and the conclusions of these Committees constitute a valuable body of evidence.

Another publication which had an important bearing upon the constitutional question was the report of the Indian States Committee, which was placed before Parliament in April, 1929. The establishment of this Committee was referred to in last year's Report, and the question of the relationship between the Crown, the Indian States, and British India, which it was required to investigate, is in many ways the most complex and fundamental of all those with which Parliament will have to deal.

Apart from these enquiries into various aspects of the great problem of India's future constitution, some important investigations into financial, industrial, and social matters have been in progress. In June 1929, the Government instituted a far-reaching examination,—which it is estimated will not be concluded until 1931,—into the banking system in India. It will be recalled that banking policy and practice has been the subject of controversy for some time, and that as a result of the recommendations made in 1926 by the Royal Commission on Indian Currency and Finance, a measure known as the Reserve Bank Bill, containing provisions for the creation of a Central Bank for India, was put before the Legislative Assembly early in 1928. The Bill however was rejected, and the Government, considering that the atmosphere in which it had been discussed was not favourable to public investigations into technical and scientific subjects, decided to postpone further enquiry on the subject of banking at least until it had had an opportunity of considering the recommendations of the Royal Commission on Agriculture. By 1929, however, it was felt that circumstances had improved sufficiently for the whole issue to be revived, and a Central Committee of Enquiry, and no less than ten local Committees, were accordingly set up to study the existing system of banking in general, and in particular to consider the practicability of protecting the interests of the public by means of some system of regulation and control, and of developing both indigenous and joint-stock banking in relation to the requirements

of agriculture, commerce, and industry, and of improving technical instruction in such a way that a sufficient number of qualified Indians might be forthcoming to satisfy the country's need for a sound and well managed national banking system.

Mention was made in last year's Report of the appointment of the Royal Commission on Labour, which was constituted in January 1929 to investigate the existing conditions of labour in industrial undertakings and plantations in British India. The Commission started its work at Karachi early in October, and visited all the major Provinces and administrative areas except Burma before it sailed for England towards the end of March. At almost every important centre visited by it, the Commission received a gratifying amount of co-operation from employers and employees alike, and collected valuable evidence both written and oral. In addition to the regular members of the Commission whose names were given in last year's volume, it was found necessary during the year to co-opt a medical assessor, in view of the importance which the Commission attached to the many problems which seemed likely to arise concerning the health of the workers in the industrial centres; and Lt.-Col. A. J. H. Russell, C.B.E., I.M.S., the Director of Public Health in Madras, was selected for the post. The Commission was helped in its investigations at the more important places which it visited by non-officials described as assistant commissioners, who were co-opted by the Chairman from each Province to represent employers and employees in equal numbers, and valuable aid was also rendered by lady assessors well acquainted with the general conditions of life prevailing amongst female and juvenile industrial workers. In their enquiries into the conditions of labour on the railways, the Commission also obtained the advice of railway assistant commissioners representing the managements and the employees. The only notable difficulty experienced during the tour was the boycott declared against the Commission by the All-India Trade Union Congress during the session held at Nagpur at the end of November; but this proved by no means so embarrassing as the words might suggest, since representatives of 30 unions, including some *ex-officio* members of the Executive Council of the Congress and a number of distinguished delegates, resigned as a protest against the decision in favour of boycott, and formed an independent and less intransigent organization known as the All-India Trades

Union Federation. The Royal Commission is resuming its work in India during the latter part of 1930, and it is hoped that the results of its labours will be available for discussion in the next issue of this Report.

Another investigation whose origins and functions were described in last year's issue of this Report was that undertaken by the Age of Consent Committee. This body first assembled at Simla in June 1928, and began operations by framing a *questionnaire*, which it sent out to about 6,000 persons or organizations directly, and by means of the various local Governments to about 2,000 more. Approximately 1,200 replies were received. In September, the Committee started the examination of witnesses in Simla, and took advantage of the session of both the Chambers of the Central Legislature to interrogate such members as were able to give evidence. On the 15th of September it started on tour, and in the course of the itinerary visited and recorded evidence at Lahore, Peshawar, Karachi, Delhi, Ahmedabad, Bombay, Poona, Ootacamund, Calicut, Madras, Madura, Vizagapatam, Dacca, Shillong, Calcutta, Patna, Benares, Allahabad, Lucknow and Nagpur. The Committee examined about 400 witnesses representing different shades of opinion, including medical men and women, social workers, leading members of the country's various classes and communities, and exponents of both orthodox and advanced beliefs. After completing the collection of evidence the Committee adjourned in January 1929, and in April re-assembled at Mussoorie to discuss the points involved and to frame a report; this was finally signed on the 20th of June, and the recommendations which it contained are now under consideration by the Government. The Committee's comprehensive survey of the problems under investigation has provided a large amount of valuable and interesting material for the social reformer; moreover the publication of its report had a more immediate and practical significance, since it will be recollected that the progress of Rai Sahib Harbilas Sarda's Child Marriage Bill in the Legislative Assembly,—which was discussed in some detail in the two previous edition of this Report,—had been suspended until the results of the Committee's investigations into a group of problems closely associated with that with which the measure was designed to deal had been made public. Accordingly, shortly after the issue of the Committee's report, discussion of the Child Marriage Bill was resumed in the Legislature,

and on the 23rd and 28th of September it was passed by the Legislative Assembly and the Council of State respectively.

Another important publication of the year was the report made by the Rt. Hon'ble V. S. Srinivasa Sastri, P.C., regarding his mission to East Africa. Mr. Sastri had been deputed by the Government of India to help the Indian communities in East Africa to state their views to Sir Samuel Wilson on matters arising out of the Hilton Young Commission's report; and he was absent from India for about two months, his report being completed on the 31st of August. His recommendations will be found set forth in detail in Chapter II. The chief points about which Indians in East Africa are exercised are, in general, the attainment of equality of status with Europeans,—or at least of a position more in accordance with their numbers, wealth, and capacity,—and, in particular, the establishment of a common electoral roll. Mr. Sastri noted a small improvement in the relations between the European and Indian communities, but was emphatic that they still leave much to be desired.

One other important enquiry was in progress during the year and deserves mention. In September 1928, the Legislative Assembly adopted a resolution recommending the appointment of a Committee to investigate the facilities provided for Indian pilgrims proceeding on *Haj* from Calcutta, Bombay, and Karachi to the Hedjaz, and to consider the duties and powers of the Protectors of Pilgrims and the Haj Committees at the ports in all matters connected with the pilgrim traffic. A Committee was accordingly appointed shortly afterwards by the Governor-General in Council, under the Chairmanship of the Hon'ble Mr. H. B. Clayton, C.I.E., which assembled in Delhi on the 2nd of April, 1929, and applied itself first to the task of framing a *questionnaire*, which was finally approved on the 19th of April. From the 5th of June to the 22nd of August the Committee was continuously on tour, and among other places visited Bombay, Calcutta, Delhi, Karachi, Lahore, Lucknow and Patna. Oral evidence was recorded at all these centres. A sub-committee also visited Quetta. In addition, inspections were made of the pilgrim arrangements at Bombay, Calcutta and Karachi, and members of two sub-committees travelled as deck passengers on pilgrim ships from Bombay to Karachi in order to obtain first-hand knowledge of the conditions under which pilgrims ordinarily travel. On the 22nd of August the Committee

dispersed at Karachi in order to enable the members, most of whom belonged to the Central Legislature, to attend the Simla Session. In October it met again in Poona to prepare its report, which was submitted to the Government of India on the 30th of January, 1930, and was published for general information on the 15th of March. The recommendations of the Committee cover wide ground and are receiving the close attention of the Government; action has already been taken upon one of the most important of them, since arrangements were made in March, 1930, to constitute a Standing Committee on Pilgrimage to the Hedjaz, to advise the Government of India on such questions as may be referred to it under the orders of the Member in charge of the Department of Education, Health and Lands. The Chairman of the Committee is the Member in charge of this Department,—or an officer deputed by him to act as chairman on his behalf,—and the members of the Committee include the Secretary or the Joint Secretary in the Department, five Muslim members of the Legislative Assembly, and two Muslim members of the Council of State. Provision has also been made that representatives of shipping companies and of port *haj* committees may be invited to attend the meetings of the Standing Committee in an advisory capacity, whenever the Chairman considers it desirable.

During the year under review, communal riots, which had been so conspicuous and deplorable a feature of public life during the preceding years, were very much less frequent. Only 12 were of sufficient importance to be reported to the Government of India, and of these only the disturbances in the city of Bombay were really serious. Starting on the 23rd of April they continued sporadically until the middle of May, and were responsible for 35 deaths and about 200 other casualties. An event which caused considerable tension in April was the murder at Lahore of Rajpal, whose pamphlet "*Rangila Rasul*", containing a scurrilous attack on the Prophet of Islam, had been responsible for much of the communal trouble in previous years, and also for a variety of legal and political complications which were discussed in earlier editions of this Report. Fortunately, both communities showed commendable restraint at the time of the murder, and again on the occasion of the execution and funeral of the convicted man; and although feelings ran high, no serious trouble occurred.

The communist movement continued to be a source of anxiety and to demand constant vigilance on the part of the authorities throughout the year. Brief mention was made in the previous issue of this Report of the arrest and trial of 31 persons on a charge of conspiracy to deprive His Majesty the King Emperor of his sovereignty of India; but since this trial,—known as the Meerut conspiracy case,—was not concluded at the end of the period under review, it is not permissible to enter into a discussion of it here. The Public Safety Ordinance, to which reference has already been made, had an important effect during the year in checking communist activities by persons of non-Indian domicile in India, for although it was in fact unnecessary to make use of the powers it conferred upon the Government, there can be no doubt that its existence acted as a useful deterrent; and in the absence of substantial assistance from abroad, the internal movement did not achieve the success it might otherwise have done. Communist ideas nevertheless continued to spread among various sections of the industrial population, and also, to some extent, in rural India, and the labour troubles in Bombay undoubtedly owed much of their inspiration to communist sources. The political philosophy adopted by some of the Congress leaders further encouraged the movement, and it is of significance that several "Youth Associations" have adopted communist symbols and doctrines, although in some cases it is probable that this development has been due to mere imitativeness rather than realization of the consequences involved. On the other hand, there was a definite swing of public opinion, especially among the landed classes, during the period under review, against the extravagances and dangers of communist doctrines, and it is now more widely recognized that the menace is real and demands careful attention.

During the year there was a conspicuous increase in the activities of terrorists and in demonstrations of popular sympathy towards them personally,—if not towards their methods. Within the first month of our period there occurred the famous outrage in the Legislative Assembly at Delhi, when a bomb was thrown from the gallery on to the floor of the House. Two young men, Bhagat Singh and Bhakteshwar Dutt, were arrested immediately after the explosion and on conviction were sentenced to transportation for life, the sentences being upheld on appeal. In the mean-

time, the Punjab police had been instrumental in producing for trial a number of persons, including Bhagat Singh and Dutt, who it was alleged, had been engaged in a widespread terrorist conspiracy, which not only included the bomb outrage in the Assembly, but also the manufacture of bombs at Lahore, Saharanpur, Calcutta and Agra, a dacoity for political purposes in Bihar and Orissa, a plot to rob the Punjab National Bank at Lahore, and the murder on the 17th of December 1928 in the streets of Lahore of Mr. Saunders, Assistant Superintendent of Police, and of Channan Singh, Head Constable. The case as a whole became known as the Lahore Conspiracy Case. Since the accused were still under trial at the end of the year, it would be improper to discuss it, but in fairness to Dutt it may be mentioned that although his sentence in connection with the Assembly bomb outrage held good, he was discharged from the conspiracy proceedings. But while refraining from comment on the merits of the case, it is nevertheless necessary to refer to some of the features that characterised the trial. From the outset the accused on one pretext or another caused a series of interruptions to the proceedings which brought the administration of the law into contempt, and by resorting to hunger strike they effected a complete paralysis of the legal machinery. After the Government had satisfied itself by reference to the High Court of Judicature at Lahore that no remedy for this state of affairs was available under the existing law, it introduced in the Simla Session of the Central Legislature proposals for legislation in the form of a Bill popularly known as the Hunger Strike Bill. The object of the Bill was to fill in the *lacuna* which had become apparent in the law, by allowing a trial to proceed in the absence of an accused who by his voluntary act rendered himself, to the prejudice of justice, incapable of attendance. When the Bill was introduced, a number of the accused were on hunger strike, and, as we have seen, one of them died while it was under discussion; but all except two of the accused shortly afterwards abandoned hunger strike, and in view of the altered circumstances and in deference to the wishes of the House, the Government agreed to the circulation of the measure,—a course which necessarily involved considerable delay in its further consideration. The Leader of the House at the same time made it clear on behalf of the Government that should further obstructive tactics on the part of the accused so demand, such action would

be taken as the circumstances required. This statement was interpreted by the House as indicating the intention of the Government to recommend to the Governor-General procedure by Ordinance should the necessity arise, and the statement was received without protest. After the conclusion of the period under review the conduct of the accused made this course necessary, and the Lahore Conspiracy Case Ordinance was promulgated.

The course of the proceedings in the Lahore case, the death from hunger strike of one of the accused, and the professed solicitude of the accused regarding the treatment of prisoners convicted for offences of a political nature, all combined to attract attention and enlist popular sympathy. The more prominent of the accused were exalted into national heroes, "Days" and demonstrations were celebrated in their honour, impassioned speeches were delivered in their praise, and at public meetings audiences were urged to follow the example of those who had been found guilty of the Assembly outrage. Similar celebrations were held in honour of criminals who had died on the gallows in the past for crimes committed for political purposes, and certain sections of the Press persisted in extolling their virtues. As a result, a very strong impetus was given to the terrorist movement, especially among the student and ex-student classes, and the number of those who actually engaged in terrorist plots much increased, being probably greater at the end of the year than at any previous time, while the number of potential recruits was almost unlimited. Moreover a large and growing section of the public is ceasing to regard assassination for political objects with horror, and although the outward results of the many influences operating to encourage revolutionary crime were not fully apparent until after the close of the year, a number of outrages and attempted outrages occurred, especially in Bengal and the Punjab. Of these the most daring was the attempt made on the 23rd of December to wreck the train on which H. E. the Viceroy was returning to Delhi.

The industrial life of the country,—although still far from satisfactory,—was less violently disturbed in 1929-30 than during the exceptionally difficult period covered by the previous issue of this Report. The total number of strikes that occurred during 1929 was 141, as compared with 203 during the previous year, and the number of men involved was 531,059. 12,165,691 working days were lost as a result of these disputes, whereas the number

lost during 1929 amounted to as much as 31,647,404. During the first three months of 1930 a further 35 strikes, in which 83,234 men were concerned, took place, and the working days lost as a result of them totalled 1,624,173. Over the whole period of fifteen months the proportion of strikes in which workmen were successful in gaining any concessions was slightly under 41 per cent. of the total. The Provinces chiefly affected by these disputes, were,—as one would expect,—Bombay, Bengal, and Madras, which accounted between them for over 83 per cent. of the total number of strikes that occurred throughout the fifteen months. The disputes during the period in the Bombay Presidency amounted to 83, and involved a loss of 9,118,736 working days; the corresponding figures for Bengal were 48 and 4,095,112, respectively, and for Madras 14 and 161,257. Another Province which suffered severely from industrial dislocation was Bihar and Orissa; no more than 3 disputes occurred in this area, but they were extremely protracted, and although only 8,373 men were involved in them, they entailed a loss of 210,636 working days. Turning now to consider the matter functionally rather than geographically,—that is to say from the point of view of the industries or groups of industries concerned, rather than the Provinces affected by the disputes, we find that 89 strikes occurred in cotton and woollen mills, 48 in miscellaneous industries, 16 in jute mills, 11 in engineering workshops, 8 in railways and railway workshops, and 1 in mines. The largest number of working days,—namely 8,424,844,—were lost in cotton mills; jute mills followed with 3,807,915, and there were losses of 807,525, and 407,920 respectively in railways (including railway workshops) and in miscellaneous industries. Of the two general strikes that took place in 1929, the Bombay textile mills dispute caused a loss of 6,736,192, and the Bengal jute mills dispute of 2,896,000 working days; 272,000 men were affected by the latter stoppage, and 109,232 by the former, which lasted from April to September, and caused very serious inconvenience and distress,—besides some unfortunate clashes between the strikers and the police during May, and again in July. This strike moreover was remarkable not only for its gravity and duration, but also for the fact that it provided that first occasion for putting into operation a part of the new machinery for arbitration established under the Trades Disputes Act of 1929; on the 3rd of July a Court of Enquiry was

set up by the Government of Bombay to investigate a number of the more important questions arising out of the dispute, and its activities were to a considerable extent instrumental in terminating it. The trouble in the Bombay mills arose out of alleged acts of victimization on the part of the employers against men who had been concerned in industrial troubles of the previous year, but unquestionably the stoppage was needlessly prolonged by the intransigent attitude adopted by the leaders of the Girni Kamgar Union; moreover, from the point of view of the workers' original demands, the struggle terminated unsuccessfully. Fortunately the general strike in the Bengal jute mills, which broke out in July, was of much shorter duration,—since the number of men involved in it was more than twice as large. The trouble arose as a result of the decision made by the Calcutta mill-owners to increase the working hours of the men from 55 to 60 hours a week,—a step which was considered necessary in view of the general economic depression and the increasing competition which the hitherto uniquely favoured Bengal industry is beginning to feel as a result of the progress of jute growing and jute manufacture in other parts of the world. Preliminary steps were being taken by the Government of Bengal during September to resort to the powers conferred under the Trades Disputes Act in order to induce a settlement, when the strike was satisfactorily terminated by direct negotiation between the employers and the men, after it had been in progress for eleven weeks. The majority of the workers' demands were conceded. Of the numerous other strikes that occurred during the fifteen months under review, three were sufficiently serious to deserve individual mention. The first was the stoppage which started on the 7th of December 1928, and was maintained until the last week of February 1929, as a result of a dispute over a matter of personnel between the management and the operatives of the three big oil-distributing concerns in Bombay,—namely the Burma Oil Storage and Distributing Company, the Standard Oil Company, and the Indo-Burma Petroleum Company. 95,839 working days were lost as a result of this stoppage, which proved unsuccessful from the workers' point of view. The second important strike that occurred was the extremely protracted and distressing struggle between the operatives and the management of the Tinplate Works at Golmuri, near Jamshedpur, in Bihar and Orissa, which began on the 6th of April and

continued until the 19th of November. The original cause of the trouble was the dismissal of certain employees for reasons which their fellow-workers considered unfair, but grave complaints were also made of insufficiency of wages, inadequacy of housing facilities, and lack of proper arrangements for a provident fund and of rules concerning leave and sickness. No less than 151,768 working days were lost as a result of this struggle, despite the fact that only 3,000 men were involved in it. When work was resumed in November the concessions which the workers had originally demanded had not been obtained. The third important dispute to which some reference must be made was the trouble that arose on the Great Indian Peninsula Railway during the spring of 1930. The causes and course of the struggle were somewhat confused. In order to redress certain alleged grievances in connection with wages, the Great Indian Peninsula Railwaymen's Union,—whose leaders, together with those of the Girni Kamgar Union, had been among those who had supported the decision made by the Trade Union Congress at Nagpur to boycott the Royal Commission on Labour,—had called upon its members to cease work for one day only; but shortly before the 4th of February, which was the date selected, it was announced that the stoppage would be persisted in until the demands of the Union had been conceded, and conditions did not return to normal until the 21st of April, when the strikers resumed work without having achieved their ends. Throughout the period of the stoppage railway working on a reduced scale was maintained, but the inconvenience inflicted on the public was nevertheless considerable. 22,608 men were involved in the strike, and no less than 893,617 working days were lost as a result of it. Considering the number and gravity of the various industrial disputes that took place during the year, the amount of civil disturbance that resulted was remarkably small, and the only serious clashes with the police were those which took place in May and July during the general strike in the Bombay textile mills,—to which reference had already been made.

The commercial and financial events of the year next claim our attention. The dominating influence upon the world's trade and monetary affairs throughout the first half of the period under review was the unprecedented speculation which took place on the stock exchanges of the United States of America, together with the

endeavours made by the Federal Reserve Bank Authorities to curb it. The consequent restriction of credit attracted short term money from all over the world, and other currency authorities had to raise their lending rates to prevent the outflow of funds and to protect their exchanges. The similar though less violent boom which had been in progress on the British stock exchanges came to an end in the middle of October, and the long expected break in the United States followed at the end of the month, the fall in the value of securities being extremely sudden and severe. The shock to commercial activity caused by this abrupt drop in security values induced a marked decline in the wholesale prices of commodities, which was aggravated by the large withdrawals of gold by several European countries, especially France and Germany, into their currency reserves. The financial result of this curtailment of demand was a rapid lowering of money rates. Bank rate in England was reduced from 6½ per cent. in October to 3½ per cent. by March, and at the end of the year under review discount rates in London were below 2½ per cent. But this plethora of funds, being due not to an increase in supply but to curtailment of industrial demand coupled with a general nervousness to lend, could not immediately produce a corresponding reduction in money rates in those States which are still dependent on external capital for their development; their condition indeed was worsened, owing to their being primarily exporters of agricultural produce and raw materials whose value was affected most by the general fall. The second half of the year was thus a period of difficulty for all such countries throughout South America, Africa, and Asia, and also for Canada, Australia and New Zealand. Some had even to resort to temporary measures for the restriction of gold exports, which in effect meant a suspension of free exchange as between their internal currency and external currencies; they had also to truncate their capital expenditure, thereby, in a vicious circle, reducing their orders for manufactured goods from the industrial States which are their usual creditors and the purchasers of their raw materials. India, whose general economic well-being is still closely dependent on the world demand for her exportable surplus of agricultural produce, could not hope to escape the serious effects of this world-wide slump. Luckily the monsoon was generally speaking adequate and well-distributed, and the crops were satisfactory, the cold weather wheat crop of Northern India in parti-

cular affording a much-needed relief to the cultivator after the failures of the preceding two years. Cotton, jute, tea, coffee, and ground-nuts were also good, and had prices not collapsed the year's trade returns would have been excellent. Even as things were, the visible balance of trade in private merchandise was Rs. 79 crores in favour of India, as against Rs. 86½ crores in the year before. Exports were valued at Rs. 311 crores, a decrease of Rs. 19 crores as compared with the previous year. Although the export trade was to a certain extent directly reduced by the curtailment of demand resulting from the world-wide industrial depression, the main reason for the decrease in value was the almost catastrophic drop in the prices of India's principal export staples; the decline in the prices of raw and manufactured jute, raw cotton, oil-seeds, tea, cereals, pulses, and hides and skins between March 1929 and March 1930 amounted in the aggregate to the extraordinary figure of 21 per cent. The value of the exports of raw and manufactured jute fell from Rs. 89 to Rs. 79 crores, though the weight only fell from 1,809 to 1,765 thousand tons. Similarly, though the exports of cotton rose from 663 to 727 thousand tons, the value fell from Rs. 66·25 to Rs. 65·08 crores. Seeds dropped from Rs. 29·5 to Rs. 26·5 crores, and hides and skins, raw and manufactured, from Rs. 19 to Rs. 16 crores. Lac decreased from Rs. 8·65 to Rs. 6·97 crores. Tea fell from Rs. 26·5 to 26 crores owing to the decline in prices, the quantity exported having risen from 360 to 377 million lbs. Exports of metals and other minerals, however, increased from Rs. 10·5 to Rs. 12 crores, and grain from Rs. 33·69 to Rs. 34·79 crores, the latter increase being due to exports of rice, which rose from Rs. 26·5 crores to Rs. 31·5 crores. Raw wheat, on the other hand, fell from Rs. 1·69 crores to Rs. 21 lakhs, owing to the failure of the crop in Northern India during the beginning of 1929; and other grains and pulses fell from Rs. 4·37 to Rs. 2·0 crores. As regards imports, the value declined from Rs. 251·5 to Rs. 239 crores. The largest decrease was in grain, pulses and flour, which fell from Rs. 10·73 to Rs. 5·42 crores, owing to the fall in wheat imports from Rs. 8·17 to Rs. 4·98 crores; nearly Rs. 2 crores of this were imported in the first two months of the financial year, owing to the failure of the crop in the previous year. The imports of cotton yarns and manufactures fell from Rs. 63·25 to Rs. 59·50 crores, and imports of iron and steel fell from Rs. 20 crores to Rs. 17 crores. On the whole, however,

considering the exceptionally difficult economic conditions throughout the world as a whole, the export and import trade of the year was satisfactory. The labour situation was also somewhat improved, as was shown in the preceding paragraph; but industry was unfortunately too closely involved in the world-wide depression to profit by this slightly better atmosphere. The steel industry suffered from the unavoidable curtailment of capital expenditure on the railways and elsewhere, and the prosperity of the jute mills was affected by the heavy fall in the price of their produce owing to the reduction in the demand from the chief purchasing countries; the Bombay cotton mills had been severely handicapped by the prolonged strikes and other adversities of the preceding years, and before they had a chance to regain the lost ground the drop in the price of raw cotton dealt them a fresh blow; by the end of the year the increase effected under the Budget in the piece-goods tariff re-opened to them the prospects of considerable relief from their immediate difficulties, the results of which might have been apparent by the time this Report is published had not the whole commercial life of the country been exposed after the conclusion of the period under review to the devastating influence of the Civil Disobedience Movement.

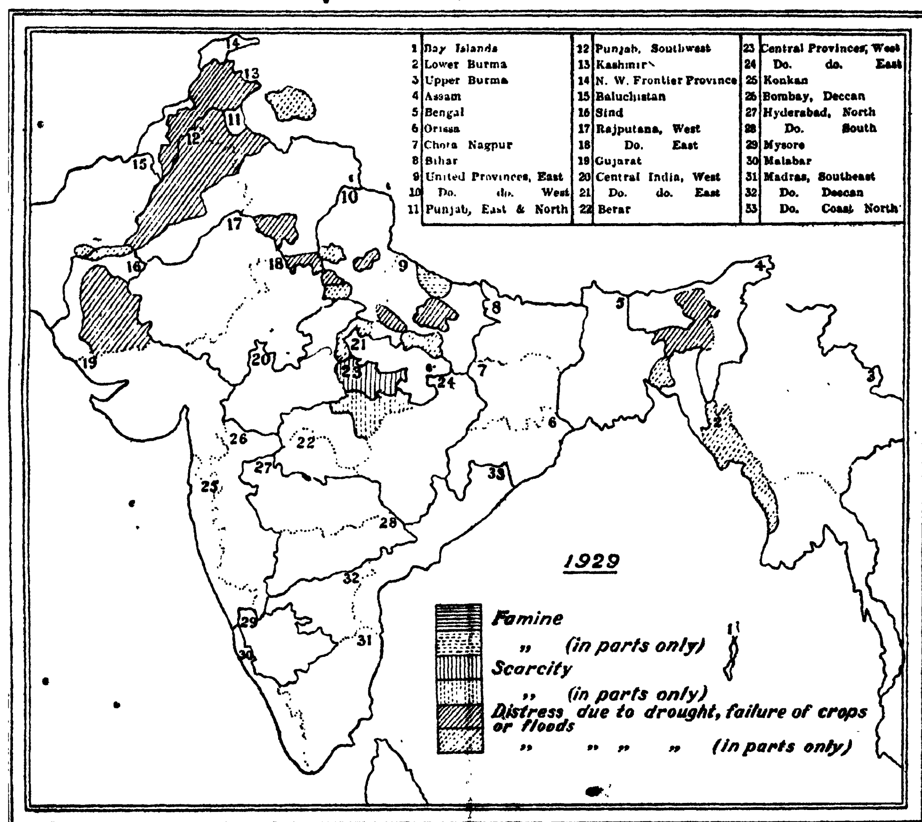
Indian finance was even more closely affected than commerce by the international situation during the year, particularly during its first half. To prevent the outflow of funds during that period, when the demand for money in India is seasonally weak, large amounts had to be withdrawn from the market, and in the absence of a Central Bank such as the Royal Commission on Indian Currency and Finance had recommended, the only practicable method was the issue of Treasury Bills. These issues enabled the Government not only to maintain the exchange value of the rupee without selling gold or sterling, but to purchase a fair amount of remittance towards meeting the requirements of the Secretary of State in London. The relief in the international tension occurred just at the beginning of the busy season, so that it was possible for India to obtain its seasonal finance during the cold weather at rates which were by no means abnormal. But unfortunately the slackening of money rates in international centres after October afforded little immediate relief, and the difficulty to sell or to borrow was intensified by political developments. Anxiety about the constitutional future of India began to dominate the London

market for Indian securities during the late autumn. Investors were in a timid mood, as a natural result of the general collapse in the prices of securities, and their nervousness was increased by the strong criticisms of the political situation in India made by certain sections of the British Press. At first the effect of this was not really serious; Indian sterling securities, instead of sharing in the general recovery in gilt-edged stock on the London market, still tended to sag, but an offer of twelve months sterling bills by the India Office in the middle of December met with a good response at reasonable rates. The Press campaign, however, had made the British public unusually alert to the possible implications of the resolutions passed by the Indian National Congress at Lahore, which included an announcement which had first been made some years before without attracting serious attention, to the effect that were *Swaraj* attained, the Indian nationalist government would reserve the right to repudiate such debt obligations of the Government of India as it considered had not been incurred in the interests of the country. The resolution attracted comparatively little notice in India at the time, but coming as it did so shortly after the attempt to wreck the Viceregal train outside Delhi, it caused considerable alarm on the stock exchanges in England. Indian sterling securities in consequence suffered a further drop, which brought the 3½ per cent. loan down from the October level of 65 to 58, which was the lowest price recorded since 1921. A tendency was also manifested by investors in general to sell securities in India and remove the proceeds out of the country, and the more cautious Indian investors began to spread their risks by investing part of their capital abroad. The result was a serious sympathetic decline in the price of rupee securities, principally the longer-dated loans of the Government of India. At the end of January, the India Office intervened by announcing that it was not the intention of the British Government to allow a state of affairs to arise in India in which the repudiation of the Government debt would be a practical possibility, which steadied the market,—though security prices still remained low and the outflow of capital kept exchange dull and prevented Government from purchasing sterling. But the gradual return of confidence was considerably encouraged by the Budget, which came up for consideration at the end of February. Although the deficit for the year 1929-30 was estimated at Rs. 156 lakhs as compared with the original estimate of

Rs. 90 lakhs, it was entirely covered by the sum held by India at credit of the German liquidation account under the Treaty of Versailles, which accrued to the Government of India as a result of decisions reached at the Hague Conference. The estimated gap between revenue and expenditure for 1930-31, after the deduction of various savings and retrenchments, was estimated at Rs. 410 lakhs, which was met by an increase in the income-tax, increased duties on cotton piece-goods and sugar, an increase in the excise duty on kerosene, and the imposition of an import duty on silver. The new duties, it was estimated, would under normal conditions provide a surplus of Rs. 70 lakhs of revenue over expenditure, and as the Budget proposals other than those relating to income-tax were to come into effect at once, the current revenues would also benefit to the extent of Rs. 35 lakhs. These measures, including as they did such evidence of regard for conservative financial principles as the inclusion for the first time of a full provision to meet the accruing liability on the Post Office cash certificates, were taken both in India and abroad as a proof of the determination of the Government to maintain the country's finances on a sound basis, which was reinforced by the drastic curtailment effected in the programme for fresh capital expenditure. The railway capital programme was cut down from Rs. 26·50 crores for 1929-30 to Rs. 14·40 crores for 1930-31, and corresponding, though smaller, reductions were made in the minor capital programmes, including those of the Provinces. The result was an appreciable improvement in the general atmosphere by the close of the period under review. Sterling and rupee securities recovered, and exchange, though it still remained just above the lower gold point and was not strong enough to enable Government to effect purchases, was strengthening in sympathy, and it seemed that sales to Government could not be long delayed. The bank rate of the Imperial Bank still stood at 7 per cent., to which level it had been raised at the end of October, but it was evident that it could soon be lowered with safety. By the end of the period under review, it might, in fact, fairly have been claimed that Indian commerce, industry, and finance had withstood the exceptional economic difficulties of the time with success, and that if only political disturbances could be avoided the future could be contemplated with equanimity.

Let us now turn to consider the climatic events of the year. As has already been indicated, and as will be clearly realised

Areas affected with Famine, Scarcity or Distress in 1929.



from a glance at the diagram opposite, the monsoon was, on the whole, a good one; and the importance of this, to a country containing some 320 million inhabitants of whom nearly 90 per cent. are closely dependent upon the land for their livelihood, can scarcely be over-estimated. But uniformity of climate over the whole sub-continent is naturally never obtained, and even in the best years, when the rainfall is plentiful and well-distributed, some areas are bound to be afflicted either with drought or floods of so serious a kind that their inhabitants are exposed to privation and have to receive material assistance from the Government; and frequently actual famine occurs. These words,—famine, scarcity, and distress,—have a definite administrative significance in India. Distress is the mildest term and when a tract of country has been formally declared to be in a state of distress, local officers must prepare for eventualities and keep a close watch on the situation,—although it does not necessarily follow that they need take any special measures to relieve it. But should the distress become acute, then a state of scarcity is declared, and this normally involves definite action on the part of the Government, in the form of grants of *taccavi*, or Government loans made on very lenient terms. In the event of famine having to be declared the whole force of the elaborate and highly efficient machinery for relief, which has been gradually evolved as a result of a century and a half of administrative experience, is brought into operation, and in addition to generous grants of *taccavi*, employment is given on special works, and payments of land revenue are as a rule either remitted or suspended.

During the period under review, famine or scarcity occurred in parts of the United Provinces, the Central Provinces, and the Punjab, owing to deficiency of rain, and serious distress was caused by floods in parts of the Punjab, the North-West Frontier Province, Assam, Burma, Bengal, Bombay, Baluchistan, and Kashmir. In the United Provinces, owing to the failure of the monsoon of 1928, famine had to be declared in 720 square miles in the Gonda District and in 500 square miles in the Bahraich District, and scarcity was declared in a small tract of 120 square miles South of the Rapti river in Gonda. Distress was also recognized in the Sultanpore, Faizabad, Fatehpur, Cawnpore, Shahjahanpore and Muttra Districts. Test works were opened in all these areas, but it was not found necessary to ask for an actual declaration of

famine or scarcity except in the regions mentioned. The Government, however, remitted a very large proportion of the revenue suspended from the *kharif* or summer crop, and in addition suspended or remitted a considerable proportion of the instalment due on the *rabi*, or winter, crop. Large sums were also given out in *taccavi*. The total amount of revenue remitted was Rs. 51·64 lakhs, and the amount of *taccavi* distributed for the two harvests was Rs. 1,51 lakhs; in addition, over Rs. 4½ lakhs were spent on fodder operations. The fact that the Province came through a period of such real difficulty without resort to famine operations on a large scale was gratifying, and demonstrated that a considerable increase had occurred in recent years in the people's resources and powers of resistance. The relief measures that were undertaken in the most severely affected portions of the Gonda and the Bahraich Districts were of the four usual kinds, namely public works, civil works, private works and gratuitous relief. All the works were closed by the end of June, but gratuitous relief was continued till August. Towards the end of the year, however, the agricultural situation in another part of the Province began to give cause for anxiety; in the Meerut, Agra, Jhansi and Allahabad Districts the damage from drought and locusts proved to be considerable, and the Government gave relief by remitting Rs. 15,92 lakhs of land revenue, suspending Rs. 4,18 lakhs, and allotting a sum of Rs. 32 lakhs for distribution as *taccavi*. Arrangements were also made for supplying about 2 lakhs of maunds of forest hay to the Districts of Meerut, Bulandshahr, Agra and Muttra. Test works had to be opened in the Muttra District in December; but up to the end of 1929 there was no evidence of widespread distress. During the year a sum of Rs. 25,000 was contributed for relief purposes in the Province as a whole from the funds of the Indian Peoples' Famine Trust.

In the Central Provinces, the exceptionally cold weather which occurred in the first two months of 1929 caused very serious damage to the wheat crop in the Districts of Jubbulpore, Saugor and Damoh, and in the greater part of Seoni, Mandla and Narsinghpur; and the linseed and leguminous crops were practically destroyed. Moreover during the cloudy and unsettled weather which followed, rust appeared and created additional havoc over a considerable area. The relief measures undertaken consisted in the declaration of scarcity in the affected areas, or the renewal of declarations

already made; the remission of the suspended land-revenue of the previous year, amounting to nearly Rs. 14 lakhs; suspension of the instalments of an interest on *taccavi* loans; and suspension of the *rabi kist* for 1928-29, amounting to about Rs. 24 lakhs. Arrangements were also made for the distribution of *taccavi* on a liberal scale. Public works and forest works were started, and the Government forests were opened for free extraction of grass and minor forest produce. Gratuitous relief was also distributed; and a grant of Rs. 25,000 was made from the funds of the Indian Peoples' Famine Trust for relief in the Central Provinces as a whole.

In the Punjab, owing to the inadequacy of the monsoon of 1929, there was a general failure of crops in certain portions of the Hissar and Gurgaon Districts, which necessitated the opening of test works at eight places towards the end of the year. The District Boards concerned were in charge of these works, and a sum of Rs. 20,000 was placed by the Government at the disposal of each of the Deputy Commissioners for use in connection with them. The other relief measures undertaken by the Government consisted of liberal grants to District Boards by the Communications Board for employment of labour on roads; the allotment of Rs. 47,000 for the construction of bunds in the Gurgaon District; the grant of a loan of Rs. 5,000 without interest to enable the municipal Committee of Bhiwani, in the Hissar District, to engage labour; the introduction of concession rates on a large scale for the import of fodder by rail from areas where there was a surplus; the suspension and remission of land revenue, where necessary; and liberal grants of *taccavi* for use in constructing wells and purchasing seed grains, bullocks and fodder. But while these two Districts in the Eastern portion of the Province were afflicted with drought, no less than 9 Districts in the West and South, namely Attock, Mianwali, Gujrat, Jhelum, Shahpur, Jhang, Multan, Muzaffargarh and Dera Ghazi Khan suffered very serious distress as a result of the rise in the levels of the rivers Indus, Jhelum, and Chenab which occurred in the summer,—largely as a result of the bursting of the Shyok dam,—and caused exceptionally serious floods. This disaster was moreover not confined to the Punjab, but also seriously affected the North-West Frontier Province, as we shall shortly see. In all the Districts concerned a system of warning and evacuation had

been carefully prepared beforehand and it worked on the whole successfully; but as the inhabitants of these regions are accustomed to seasonal floods of moderate intensity, some difficulty was experienced in convincing them of the exceptional gravity of the danger on this occasion, and had it not been for this, the loss of human life and of cattle would have been substantially smaller than it was. It is not possible to make an exact statement of the damage caused in the Punjab by this calamity, but it is believed that about 225 lives were lost, and that the total destruction of property in the six Districts other than those of Attock, Mianwali, and Muzaffargarh amounted to about Rs. 237 lakhs. In the rural area of the Mianwali District alone, 11,153 houses, 3,852 cattle, 16,739 maunds of grain, 1,32,971 maunds of *bhusa*, and 13,200 acres of crops were lost; while in the Muzaffargarh District, over 100 villages were completely destroyed and 483 damaged, more than 7,300 cattle were reported missing, and 40,000 houses in all completely disappeared; nearly 50,000 maunds of grain and about 3,50,000 maunds of fodder were also washed away. The Attock District suffered less severely, the number of houses destroyed being no more than 417, but the damage caused by the breach in the Malakwala bund was estimated at Rs. 40,000. The Government sanctioned the distribution of over Rs. 28 lakhs as *taccavi* in the affected areas, and remitted Rs. 3·16 lakhs and suspended Rs. 19,709 of land revenue. In addition, a sum of more than Rs. 2·14 lakhs was granted by official and other organizations for gratuitous relief. A grant of Rs. 1·75 lakhs was also made from the funds of the Indian Peoples' Famine Trust. The only redeeming feature of the disaster was that large quantities of rich silt were deposited by the floods over the devastated areas, whose fertility and productiveness should thus be considerably increased in future years.

In the North-West Frontier Province the floods during August and September were also very serious, and on the 29th of August the level of the Indus at Attock was no less than 9 feet higher than on the occasion of the last Shyok flood. Amongst the most gravely affected Districts were those of Hazara, Peshawar, Kohat, and Dera Ismail Khan; but the heaviest losses of all, both in human life and in property, were experienced in the Malakand Agency, including the Dir and Swat States. Destruction in the Peshawar District chiefly occurred in the area of the Charsadda *tahsil*

bordering on the Swat River, in parts of the Nowshera and Swabi *tahsils* situated on the Kabul river below Nowshera, and in certain tracts of the Peshawar *tahsil* on the Banks of the Bara River. At least 121 lives were lost throughout the Province, and the total damage to property was estimated at Rs. 110 lakhs. For the relief of distress in the affected area a sum of Rs. 15,000 was immediately placed by the authorities at the disposal of the Deputy Commissioner of Peshawar, and steps were taken to provide relief in the form of food, medical attendance and blankets for the villagers. Relief funds were also started at Peshawar and Dera Ismail Khan. In addition, a grant of *taccavi* amounting to Rs. 4·5 lakhs,—over and above the annual budget grant of Rs. 2·25 lakhs,—was sanctioned by the Government of India.

In the Province of Assam, abnormal rainfall during May and June caused serious floods both in the Assam and Surma Valleys. In the former, the rivers Kopili, Borpani, and Jamuna, in the Nowgong District, began to rise on the 9th of June, and three days later were in full flood. Warning was at once given to villagers down-stream to remove to higher ground; in several places the railway embankments formed the only refuge, but at numerous points between Silghat and Chapramukhi they were seriously breached. Considerable damage was also done to the South trunk road, and one ferry was sunk while carrying mails. About 30,000 people were rendered homeless over an area of about 100 square miles, and the distress was great. The loss of property is estimated to have amounted to at least Rs. 20 lakhs. A sum of Rs. 36,000 was given by the Government for gratuitous relief and the purchase of food-stuffs, and agricultural loans amounting to Rs. 1·5 lakhs were distributed. Steps were also taken for supplying seed grain, and helping the afflicted population to obtain building materials from the reserved forests and from Government waste lands. State assistance was reinforced by excellent work on the part of the organizers of the Kopili and the Nowgong Relief Funds. The flood was the highest on record, and the speed with which it travelled added to its destructiveness; but as a result of the timely warnings given by the Deputy Commissioner and the rapid organization of relief, no lives were lost either by drowning or starvation in the Assam Valley. The floods in the Surma Valley, which resulted from rainfall amounting to about 49 inches more than the normal in the hills surrounding

Cachar and in Silgarh, were, however, even more serious. The Cachar District suffered most severely, and here the loss of crops and food stocks alone was estimated to have amounted to between Rs. 20 and Rs. 25 lakhs. The Government sanctioned the grant of Rs. 3·3 lakhs for gratuitous relief and the purchase of food stuffs, of which it was estimated that about Rs. 50,000 would be regained as a result of credit sales, the balance being equivalent to a free distribution; Rs. 7·75 lakhs were also granted as agricultural loans. Extra staff was placed at the disposal of the local officers in order that distribution might be effected promptly. The provision of fodder for such cattle in this District as had not been drowned was extremely difficult, since the land remained submerged for many days. Water hyacinth was used on so large a scale as to give it a marketable value, but it proved a poor substitute for grass, and large numbers of animals died from sickness and starvation. Considering the extraordinary dimensions of the flood in the Cachar District, the loss of human life was not great. The total number of deaths by drowning was 86, the majority of the victims having been Lushai timber cutters and boatmen who were trapped in the Dhaleswari gorge in Hailkandi. As compared with the Cachar District, the damage in the Sylhet District, which lies further away from the hills, was relatively slight; four persons were drowned by the capsizing of boats, but no villages were blotted out of existence. The cattle however were in terrible plight, and it is estimated that in the most seriously affected areas 40 per cent. of them were drowned or died for want of fodder. The Government sanctioned a grant of Rs. 1·57 lakhs for gratuitous relief and the purchase of food stuffs, and Rs. 23·9 lakhs for distribution as *taccavi*. Officers were also instructed to exercise lenience in recovering arrears of land revenue from temporarily settled estates. A sum of Rs. 1 lakh was given from the funds of Indian Peoples' Famine Trust for relief purposes in Assam.

In Burma, considerable damage was done in the Akyab and Northern Arakan Districts as a result of floods in the Kaladan Valley, and most seriously affected parts being in the neighbourhood of Palatwa, Kyauktaw, and Myohaung. At Palatwa the floods began on the 11th of June but had completely subsided on the 14th, leaving the town under several feet of mud and silt. No lives were lost, but a considerable quantity of food stuffs perished, and a sum of Rs. 12,000 was granted by the Government

for relief. By the 12th of June the flood had reached Kyauktaw and Myohaung, and rose to a height of 10 feet to 12 feet in some neighbouring villages, destroying large quantities of food, seed grains, and cattle; the villagers however escaped to higher ground and no loss of life was reported. The floods extended over about 100,000 acres and altogether between 10,000 and 15,000 houses suffered some degree of damage. The total loss of rice, paddy, cattle, and house property was estimated to have amounted to between Rs. 15 lakhs to Rs. 25 lakhs, and about 15,000 plough cattle and buffaloes are believed to have been lost. To relieve the shortage of food, supplies of rice were despatched from Rangoon and also 1,000 tons to seed paddy,—Government launches and hired private launches being used to tow the cargo boats. Eight food *depôts* were established in different parts of the devastated area, and agricultural officers toured through it and supplied seed grains wherever there were fair prospects of broadcasted paddy giving a crop. Steps were taken to clear creeks, tanks and wells or obstructions or dirt, and to prevent the outbreak of disease. The Government sanctioned grants of Rs. 3 lakhs for agricultural loans, and of Rs. 2 lakhs for gratuitous relief and relief works. In addition a relief fund was opened in Rangoon, and the Ramakrishna Mission and other local organizations rendered valuable assistance.

In Bengal there was a flood in the Sadar and the Brahamanbaria sub-divisions of the Tippera District during June, extending over 436 square miles, as a result of the exceptionally heavy rainfall in the Assam hills and the bursting of the Gumti embankment in two places. In addition to the funds granted by co-operative banks and private relief funds, a sum of Rs. 1 lakh was allotted by the Government for agricultural loans and Rs. 1,500 for gratuitous relief.

In the Northern part of the Bombay Presidency, also, very serious damage was done during the summer to crops, cattle, and property as a result of excessive rainfall. No less than 17 *talukas* in the Nawabshah, Thar Parkar, and Hyderabad Districts, with an aggregate population of 1,039,734, were seriously affected, and acute distress prevailed; the country turned into a vast sheet of water, large numbers of people were rendered homeless, and crops were completely destroyed. Fourteen lives were lost, and the mortality among cattle was very serious. The value of the crops lost

was approximately Rs. 42 lakhs, and the damage to property and cattle amounted to over Rs. 24 lakhs. In the Upper Sind Frontier District, also, three *talukas* were flooded out. The damage to crops was moreover accentuated in places by a visitation of locusts. Altogether gratuitous relief to the extent of Rs. 2 lakhs was sanctioned; contributions amounting to Rs. 57,000 were also made by the Sind Relief Fund, and in addition the Peoples' Flood Relief Committee gave help. A sum of Rs. 1·75 lakhs was moreover contributed from the funds of the Indian Peoples' Famine Trust, and Rs. 25,000 were granted to Khairpur State which had also suffered severely.

In Baluchistan, floods occurred in the Nasirabad *tahsil* of the Sibi District on three occasions during the months of July, August and September. The floods in July broke the earthen bund round the Civil Station of Jhatpat, and did damage to the extent of about Rs. 12,000. The floods of August and September were due to hill torrents of unprecedented volume coming down the Desert Canal and its distributaries, and owing to their unexpectedness no preventive measures could be taken beforehand; but as a result of strenuous efforts, the flood water was distributed over waste ground and the danger to Jacobabad and the Nasirabad lands was averted. Loans to cultivators and land-holders were freely given under the Agriculturists' and Land Improvement Loans Acts to enable them to purchase seed grain and plough bullocks and to repair the bunds.

In Kashmir, the two days' incessant rain towards the end of August, which contributed towards the disasters in the Punjab and the North-West Frontier Province, caused the river Jhelum to overflow the bund in several places near the Residency in Srinagar, and all postal communication with British India ceased for a few days. The Domel bridge was washed away, and large tracts of country round Srinagar were inundated. Only one life was lost, but damage to crops was serious and extensive.

Certain interesting developments that took place during the year in connection with Christianity in India,—the preliminary stages of which were mentioned in last year's Report,—may now be described. The legal union between the Church of England and the Church of England in India, whose impending dissolution we referred to, was terminated on the 1st of March 1930 under section I of the Indian Church Measure of 1927, at the request of

the General Council of the Church of England in India, which has now been designated the Churches of India, Burma and Ceylon. All property,—but for certain exceptions set forth in the Indian Church Act,—which is held on behalf of or for the benefit of the Indian Church, has now become vested in the Indian Church Trustees, who have been appointed by the General Council and incorporated by Royal Charter. The Statutory Rules which were framed under the Act came into force from the date of dissolution, and are designed to secure that congregations worshipping in maintained churches may have services in accordance with the rites of the Church of England. The Indian Church, although now independent of State control, is given an annual grant from the public revenues for episcopal supervision over Government chaplains, and for episcopal ministrations to congregations worshipping in maintained churches.

The separation of the Indian Church from the Church of England can scarcely be discussed without mentioning the movement known as the Scheme of Union, which is designed to secure the coalescence of Anglican, Congregationalist, Presbyterian, and Wesleyan bodies in Southern India, and which is a significant event in the history of religion, both from the doctrinal and the practical points of view. For, doctrinally, it is a strikingly bold project for amalgamating both episcopalian and non-episcopalian elements within one organization, which if it succeeded would possibly have important repercussions outside India altogether, by stimulating the movement towards the re-union of various communities and sects in the predominantly Christian countries of the world. On the other hand, in so far as India alone is concerned, the historical and doctrinal significance of the scheme counts for little as compared with its practical advantages. A small community such as the Christians form in this country stands to gain a great deal if it can compose its internal differences,—many of which of course pale into insignificance beside the differences which separate Christians as a whole from the religious groups that surround them. Thus, from the point of view of the future of Christianity in India, the suggested union is obviously an event containing interesting possibilities, since within it would be dissolved the historical differences whereby these particular groups of Christians have been separated in the West, but which are of comparatively little importance in an Oriental environment.

The scheme was brought up for consideration at the Conference at Lambeth after the conclusion of the period under review, and discussion of the recommendations made upon it will come within the scope of the next issue of this Report.

This preliminary Chapter may be appropriately concluded with a brief description of the progress which has been made in the construction of India's Imperial Capital at New Delhi. It may have seemed that in recent years this subject has been neglected in these Reports; the work has however been spread over such a long period, and has been so varied and extensive, that it was difficult to select the significant moment when a short general account would be obviously desirable. The life and configuration of a city, whether it be of natural or artificial origin, can however never be static, and although a considerable amount of the building projected at New Delhi has still to be finished, the fact that the Viceregal Residence, which both architecturally and politically is the focus of the whole conception, came into occupation during the period under review, may be taken as a symbol of its completion.

At the end of March 1930, the work had been in uninterrupted progress for nearly 19 years, the foundation stones having been laid by their Majesties the King and Queen in 1911; and it is unquestionable that both from the point of view of architecture and town-planning the new capital is now a creation of unusual interest and beauty. It has been constructed on flat dry alluvial ground about four miles from the centre of Old Delhi, and is dominated by the magnificent bulk of the Viceroy's House and the two great Secretariat Buildings, which have been placed about 30 feet above the level of the surrounding plain upon a low natural platform of quartzite rock. Architecturally, the general impression they give, despite their mass and great horizontal spread, is of lightness and classical simplicity, in which the best features of the modern English school have been combined with the use of the more delicate of the traditional Indian forms. The Viceregal Residence, as we have mentioned, is now practically finished, and was first occupied by Their Excellencies on the 23rd of December 1929, when there only remained a certain amount of minor work to be done upon carvings and other details and upon the furnishing of some of the rooms. The electric installation,—except for certain fittings which were being designed by the archi-

tect, was in order by the end of the period under review, and the subsidiary building scheme for the accommodation of the Viceregal staff had been completed. The Secretariat Buildings have of course now been in use for some time, the chief events of the year under review having been the extension of the North Block, the installation of heating and cooling apparatus, and the painting and decoration of some of the domes and coves by Indian artists, who were specially commissioned for the work and given an entirely free hand in its execution.

Another superb building is of course the Council House, whose opening was described in the Report for the year 1926-27. The site it occupies is not so good as that of the Viceroy's House and the Secretariats, owing to the fact that its existence was not contemplated at the time when the original plans were made, and the central shelf of the rock was not wide enough to accommodate it. It is however conveniently near the Secretariats, and from the architectural point of view it is certainly a worthy and interesting companion to the other official buildings. Certain small finishing touches were put to it during the year under review, the chief being the completion of the attic storey for the use of the Public Works Department and the installation of air-conditioning plant.

The most striking feature of the planning of the city as a whole is its magnificent use of space. Its circumference is no less than 11 miles, whereas that of Old Delhi, which is vastly more populous, amounts to about 7 only. Within this great area fine new residential districts are growing up; the Ruling Princes of India are building splendid houses in one portion, and there are groups of attractively designed bungalows for the use of the higher officials and others for the clerks. There are also schools and hospitals, churches, clubs, a large hostel for legislators and officials, the Record Office and the buildings which are to contain the Library and Museum, post offices and police stations, a growing shopping quarter, a railway station, and an aerodrome. The roads are good, and carefully aligned in relation to a single focus called the Great Place at the foot of the Secretariat Buildings; the most important, known as King's Way, leads straight from the Great Place, between ornamental waters and tree-studded grass plots, to the huge War Memorial Arch,—which has now, except for the inscriptions and the fountains, been completed,—and on towards Indrapat and the Tomb of the Emperor Humayun. Parliament

Street, the other important road, is also focussed upon a symbol of the past, since it advances straight towards the domes and minarets of the Jama Masjid in Old Delhi.

During the year under review satisfactory progress took place in the general development of the city. A scheme for the construction of additional bungalows was sanctioned, and the work is now far advanced. The residence for H. E. the Commander-in-Chief was completed, and occupied during the cold weather; H. H. the Maharaja of Jind's house was also finished, and the work on H. H. the Gaekwar of Baroda's residence made progress. Of the other Ruling Princes, those of Hyderabad, Bikaner, and Travancore have already completed their residences, and H. H. the Maharajah of Kashmir acquired in 1928 the house originally intended for H. E. the Commander-in-Chief. The building undertaken on behalf of H. H. the Nawab of Bahawalpur is not yet finished. A substantial advance was made during the year with the construction of the building designed for the use of the Central Press and the bungalows and quarters associated with it. Three more blocks of shops at Connaught Place were erected, and the remaining blocks are expected to be completed shortly. The demand for shop sites is considerable, and in order to satisfy it a scheme is being matured for the development of the outer ring of the Circus. The Burmah Shell Oil Company has completed a building just outside it, and sites have been auctioned for other blocks of offices in the neighbourhood. A site has been acquired for the construction of a theatre in a prominent part of the city facing the Public Gardens at Connaught Place, and plans for the building are under consideration; the lessee proposes to erect not only a theatre, but also a cinema or rink hall, gardens and shops. Sites have also been allotted in various parts of the city to the Red Cross Society, the Lady Minto Nursing Association, the Modern School, and the Lady Hardinge Serai, and building on some of them was in progress at the time of writing. The Civil Aerodrome near Safdarjang was in continuous use throughout the winter, and has been equipped with a bulk petrol installation; and a direction-finding Wireless Station is being constructed. Proposals for the grant of sites to commercial firms at the Aerodrome are under consideration, and a site is being reserved for the staff quarters and offices of the Meteorological Department in the neighbourhood.

CHAPTER II.

External Relations.

From the time when British Supremacy first began to be established until well on in the XIX century, India was scarcely aware of having any relations at all with the rest of the world, and remained a profoundly isolated political and cultural unit. Actually of course her welfare was as intimately bound up with the external affairs of Great Britain then as it is now,—perhaps more so,—but her people had no means of bringing influence to bear on British Imperial and Foreign policy, and consequently felt little or no interest in it. It was only very gradually,—and by the operation of a large number of different circumstances,—that a change set in, which has resulted during the last half century in such a widening of Indian interests that there are now few parts of the world in which she is not aware of having some concern. The factors which have been responsible for this remarkable transformation are both "moral" and "material". On the one hand there has been the extension of educational facilities, the urge towards democratic institutions, and the whole *congeries* of cultural tendencies, extremely difficult to summarize, which have arisen out of the impact of "progressive" Western ideas upon a complex but static and traditional Eastern civilization. On the other hand we have the direct and fundamentally important consequences of the revolution in the means of transport and communications, which by breaking down the barriers of time and space have brought all the peoples of the world into closer contact, and, so far as India is concerned, have encouraged a habit of travel amongst the propertied classes, stimulated emigration, and caused a rapid development in the country's overseas trade. In consequence there has been a marked improvement in her international and inter-Imperial status, which is exemplified by her membership of the League of Nations, her representation on the Imperial War Council and at the Imperial Conferences, and the creation of the office of the High Commissioner for India in London and of agencies in various parts of the Empire for safeguarding the interests of emigrant Indians.

Under present conditions the country's external affairs can be conveniently divided into two parts,—one being concerned with problems of defence, and the other with the relations between India and

her people overseas. In this Chapter we will deal with these two aspects of the matter in order.

To mention the defence of India at once calls to mind her land frontiers, and particularly the North-Western portion of them. But before we consider this more obvious aspect of the problem it will be as well to draw attention to another, which is liable to be overlooked. This is the question of defence by sea. The fact that since the rise of modern sea power India has been able to rely on the mightiest navy in the world for the protection of her coast-line obscures the fact that she is now peculiarly vulnerable from this direction. Her sea-borne trade is rich, and a very large proportion of her wealth is collected into centres within easy distance of the coast; moreover the few good harbours she possesses are from the naval point of view not easily defensible. It is therefore no exaggeration to say that adequate naval protection is essential to her existence. Should her surrounding seas fall under the dominance of a hostile power, she could never be secure against invasion or blockade. In the last war, the exploits of the "Emden" brought terror to large sections of the population of the coastal towns, and caused serious disorganization of trade in places far beyond the reach of the comparatively insignificant vessel to which it was due,—thus amply demonstrating how easy and how damaging even an isolated attack from the sea may prove. Moreover it should be noted that it took place at a time when the British fleet was at its maximum strength, and when even a solitary raider could not long escape its all-embracing grip. So long as India's connection with Great Britain persists and the naval power of the Empire remains adequate for the discharge of its responsibilities, it is safe to say that she need scarcely consider an invasion from the sea or any major naval action near her coasts to be at all likely, though minor raids upon her shores and upon her sea-borne traffic may always be expected. But should she ever lose her connection with the British Empire and be thrown on her own resources, her predicament in the face of the attacks by first-class Naval Powers which her wealth and importance might provoke can easily be imagined.

We may now briefly review some of the conditions upon which the problem of defending India by land must necessarily be based. For a country which possesses a land frontier of over 6,000 miles, India is comparatively well sheltered. No serious danger has arisen for years at any part of the long section of her boundaries

that runs Northwards and Westwards from the Burmese coast to the gorge of the Indus. The barrier of the Himalayas provides ample safeguard against invasion from the direction of Tibet; indeed it is only by the Chumbi Valley route that communications across this section of the frontier are at all practicable. Moreover the population of Tibet is sparse, and representatives of the Tibetan Government appear to value the goodwill of India as a factor likely to be of service to them in the preservation of their country's jealously guarded inaccessibility. The only other State with which India's Northern frontiers are in contact is Nepal, and for more than a century the relations between the two countries have been extremely cordial, for reasons which seem likely to be permanent, since they are based alike on grounds of sentiment and mutual self-interest. The practical value of the alliance to India of course chiefly lies in the fact that sections of the Nepalese population furnish the Indian Army with excellent soldiery, who fought magnificently for the British Empire in the Great War; and the potential strength of this well-integrated mountain State was clearly demonstrated by the rapid extension of her influence early in the XIX century. In passing, the fact should be recorded that Nepal suffered a severe loss during the year under review, in the death of His Highness Sir Chandra Shamshere Jang, "whose fame as a wise and progressive statesman",—as His Excellency the Viceroy said in a commemorative speech,—"had travelled far beyond the confines of his own country." He was succeeded by His Highness Sir Bhim Shamshere Jang.

In the North Eastern corner of the Indian frontiers there are some practicable passes leading into the Province of Assam, though they are scarcely open and easy enough to afford the means of serious invasion. The border of Burma, however, marches for approximately 1,000 miles with that of China, and is not devoid of routes fit for considerable bodies of civilized troops. From time to time the peace of this section of the frontier has been threatened; for the lawlessness in Yunnan has increased during the present unsettled conditions of the Chinese Republic, and while this state of affairs continues minor incursions into Burmese territory are always possible. Nor must we forget that at present China contains large numbers of armed soldiers; they are, it is true, as a rule divided both geographically and in political allegiance, but the fact of their existence cannot be ignored. Further South, Burma

marches for some 100 miles with Laos, a province of French Indo-China, and then for over 600 miles with Siam; but communications between Burma and these two countries are scarcely better than those between Burma and Yunnan, and the chance of serious trouble arising on their frontiers is in any case small, since their relations with Britain are excellent. At the same time, it is advisable to note that neither Indo-China nor Siam is by any means militarily impotent, since each maintains a considerable army and also an air-force.

It would therefore be a mistake to treat the military problems of the Northern and Eastern frontiers as non-existent. But it is to the North-West that the eyes of those responsible for the defence of the country usually turn. Here lie the gates through which invading peoples have throughout history penetrated again and again into India's very heart. The freedom from invasion which has followed the establishment of the British *Raj*, has tended to obliterate the memory of those long centuries during which the country was never free from the danger of sudden irruption and despoilment by the hordes of Central Asia. Nevertheless, even among the educated classes, with their Western ideals and progressive outlook, the latent menace from the North-West is not overlooked; and in countless villages throughout the land the dread which these marauders inspired is still vividly recalled. Moreover the fact that the inhabitants of the lands which lie beyond India's North-West Frontier are mostly of the Muslim faith exercises a considerable influence upon the currents of Indian politics. At present, the gates of the North-West, guarded as they are by a powerful army trained and organized in accordance with British traditions and experience, seem securely locked and barred against the possibility of violation. But the gates themselves remain; and to keep them closed against foreign invaders is a task which will always be one of the primary obligations of any Government which rules India.

The problems of the North-West Frontier may broadly speaking be said to be of two kinds, the international and the tribal. The international problems arise from the relations between the Government of India and the three foreign powers, Persia, Afghanistan and Russia, which in addition to Great Britain are in varying degrees interested in this corner of the world. Fortunately in recent years relations with Persia have been satisfactory. Afghanistan is not densely populated and her resources are undeveloped, but her

inhabitants are belligerent, restive and physically formidable, and large sections of them have from time to time rendered but nominal allegiance to their King and in fact conducted themselves as independent units in hostility to India. Moreover as recently as 1919-20 the Government of India was engaged in a war with the country as a whole. During the period covered by the previous edition of this Report, Afghanistan had fallen into a state of confusion as a result of the enforced abdication of King Amanullah, but fortunately during 1929-30 ordered Government was gradually re-established under the new King Nadir Shah, and there seems genuine reason for believing that Indo-Afghan relations are now entering on a more satisfactory phase. The interest of Russia in the North-West Frontier is naturally more indirect than that of Persia and Afghanistan, since at no point are her own borders in contact with it; and were it not for her magnitude, strength, and international importance, there would be no reason for considering her in connection with Indian frontier problems at all. But while she was under the Czarist system of Government, her acquisitive designs in Central Asia, and her relations with Afghanistan, and even Persia, aroused a good deal of alarm amongst those responsible for the administration of the Indian Empire; and although the establishment of the Bolshevik *régime* in 1927 deprived her of some territory, more prestige, and almost all her international connections, the fact that her new system of Government is out of harmony with that of the rest of the world, and that one of its distinctive features has been intensive anti-British propaganda, has not made for easy relations with India and indeed has led on occasions to vigorous diplomatic protests. But during the period covered by this present Report the resumption of Anglo-Russian relations brought about some relaxation of the tension which had previously existed.

We may now turn to the tribal aspect of the North-West Frontier problem. This derives from the fact that North of the Gomal river the administrative border of the Indian Empire does not coincide with the political border, or " Durand Line ", and that the region between the two,—known as " trans-border" territory,—is inhabited by groups of semi-nomadic and bellicose peoples who hitherto have never proved amenable to administrative methods of any kind, and are in close cultural relationship with similar tribal groups living beyond the political border altogether. The extremely intractable nature of these peoples is largely explained by their environment,

which consists of desolate, mountainous country in which rainfall is scanty and the means of subsistence uncertain. The result has been the development of a race of excellent physique and great powers of endurance, whose military efficacy has been vastly increased within comparatively recent times as a result of the development of modern firearms, and who have been accustomed from time immemorial to supplement their scanty food supplies by organized raids upon the more fortunately situated but less hardy peoples living in the settled districts on the plains below. To understand the nature of the administrative problems for which these people are responsible a short geographical and historical description of the Frontier territory is required.

As the term is commonly understood, the North-West Frontier means the whole tract of country which runs from the Hindu Kush down to the Arabian Sea, including the North-West Frontier Province and Baluchistan. This territory, in addition to the wild trans-border region which we have already described, contains five administered or "settled" Districts, four of which lie to the West of the Indus, while the fifth, or Hazara District, is Eastward of it. Stretching all along the Western fringe of these administered Districts, and thrusting forward here and there into trans-border territory,—as in the Malakand, the Khyber, Kurram, and Tochi valleys, at Razmak, and along the Zhob Road which runs South of Waziristan,—are cantonments or posts held by regulars, militia, frontier constabulary, or *khassadars;* whilst at the North and South respectively of the long chain of defences stand the great military settlements of Peshawar and Quetta.

The trans-border tribes are in communication with each other from North to South,—as well as with the tribes beyond the Durand Line altogether,—and military operations against any one of them are apt to produce sympathetic effects among the others. And containing as they do some of the most magnificent fighting men in the whole world, it is only picked and highly trained troops who can compete with them on anything like equal terms in their own hills. They are believed to number nearly three millions, of whom at least half are males, and of these close on 750,000 are regarded as fighting men. Their armament has vastly increased within recent years, and even in 1920 there were estimated to be about 140,000 modern rifles in tribal territory. At present it is believed that the number must be at least 220,000. The Mahsuds alone can arm

effectively about 14,000 out of a total of 18,000 fighting men, and the Wazirs 15,000 out of 27,000. It will thus be obvious that the military problem created by the geography and inhabitants of the Frontier is of the utmost gravity and importance.

Trans-border territory consists of two portions in which conditions are rather different. One is the tract which stretches from North of the Kabul River down to Waziristan and the other is Waziristan itself. The relations between the Indian Government and the tribes inhabiting the first of these portions have in recent years been fairly satisfactory. Chiefs like the Mehtar of Chitral, the Nawab of Dir, and the Wali of Swat may on occasion be responsible for inter-tribal fighting, but generally speaking they desire friendly relations with India. Trade between this section of trans-border lands and India is active, and the Swat River canal has provided land and employment for many hardy spirits who might otherwise have indulged in less innocent means of earning their livelihood. But Waziristan until very recently presented a very different problem. Its people are fanatical and intractable to a degree, and have come less under British influence than any other great trans-border tribe. The Indian Government has conducted seventeen active operations against them since 1852, four of which have taken place since 1911, and the most recent of all was the most desperate and costly campaign in the whole history of the Frontier. As one goes from North to South within the trans-border country, one finds that the constitution of tribal society grows steadily more undisciplined as one approaches Waziristan, where, until the last few years, a state of chaotic license prevailed in which every man was a law unto himself, and a well-aimed bullet was more effective than any consideration of right or justice.

The ordinary daily business of frontier administration consists in the maintenance of reasonable relations between the Government of India and the trans-border tribes. The problem is partly diplomatic,—or, as it is called in India, "political",—and partly military. The political officers guide the tribes as far as they can along the path of peace and friendliness with India, whilst the various armed civil forces, supported by troops, stand by to repel raids or more serious aggressive actions. The military history of the frontier has been adequately written more than once, but its "political" history still remains comparatively unchronicled. The larger questions of diplomacy are however extraordinarily interest-

ing and instructive, owing to the extremely important place which the maintenance of a sound policy in the North-West Frontier must always take among the pre-occupations of any Indian Government. Even before the collapse of the Sikh power in the Punjab in 1849,—which gave the British a direct interest in the frontier,—the threat of an invasion by Napoleon, and the ambitious designs of the Emperor Paul of Russia, had caused the administrators of British India to look anxiously towards the North-West. And the immensely important part played in the history of the Indian Empire by the long line of distinguished "politicals," starting from Malcolm and Elphinstone, who for the past three or four generations have been both the instruments and makers of frontier policy, is perhaps as yet insufficiently appreciated. The difficulties and dangers of the situation were at first immense. The frontier line inherited from the Sikhs was quite haphazard and indefinite; there was in existence no clear policy, or system of understandings or agreements; and for a whole generation British administration was based on the principle of non-interference in the troubled affairs across the border, except when fleeting punitive expeditions against individual tribes became imperative. But the advance of Russia in Central Asia during the Seventies of last century, and certain suggestive events in Afghanistan, brought to a head the dispute which had for some time been brewing between the supporters of the rival "forward" and "close border" policies, and ultimately led to a definite change of method. Sir Robert Sandeman's striking success in conciliating the hitherto hostile Baluch tribes to the South had suggested the possibility of establishing friendlier relations with the tribesmen as a whole, and the importance of doing so, or at least of having some surer means of ascertaining what was happening on the frontier hills, was obvious at a time when there was reason to fear that military operations West of the administrative border might become necessary. The essence of Sandeman's system was friendship with and support of the tribal chiefs so long as they behaved well, and the provision of employment for the tribesmen in the police, or levies, so that they might have material incentives for supporting peace and order. A part of Baluchistan was taken under direct British control, and British influence was established throughout the rest of the country. The first step in the new treatment of frontier questions as a whole was the establishment of the Khyber Agency in the Seventies, and this

led, through various stages to Lord Curzon's famous settlement, which is still the basis of the Government of India's policy. But the settlement did not attempt to undertake all that Sandeman had achieved in Baluchistân. It has in fact been well described as a mixture of the Sandeman and "close border". systems. The tribesmen were paid to protect their own country and the Indian border, and regular troops were withdrawn from advanced positions and replaced by tribal militia. But there was no occupation of tribal country and no attempt at any administration, however loose, up to the Durand Line except in the Wana, Tochi, and Kurram Valleys, where an informal administration on lines suitable to tribal conditions proved successful. Thus the North-West Frontier was not "Sandemanised" by Lord Curzon. Until 1914 this policy served its purpose fairly well, but amidst the unrest created by the Great War the Curzon system, like so many other institutions, collapsed. All through the War it was a question, at any rate in Waziristan, of holding on grimly and waiting for better days. And the third Afghan War, which broke out in 1919, sent along the whole frontier a new wave of unrest which broke in Waziristan in the bitterest and most determined fighting which the Government of India have ever had to undertake on the Frontier. When peace was restored it was realized that the time had come to try to settle the "political" part of the Frontier problem once and for all, and that the attempt should begin in the old frontier storm-centre, Waziristan.

The system thus adopted, which is in part a reapplication of the Curzon system, is essentially positive and constructive. In the best meaning of the word, it is a "forward" policy, for it is a policy not of military conquest, but of civilization. Since 1920, fine high roads have been driven through the hills of Waziristan, linking the trans-border posts with military posts in the rear, and tribal levies, or *khassadars*,—finding their own rifles and ammunition,—have been enrolled with the ultimate object of policing the country. Thus the spirit of self-reliance and responsibility among the Wazirs and Mahsuds should be kept alive, whilst the new cultural and economic forces will it is hoped eradicate the causes which for centuries have made murder and robbery the most characteristic activities of these virile and in many ways attractive people. We shall see shortly what measure of success has already attended this policy, but first

we may glance at the existing system of border defence in order to complete this part of our survey of the Frontier.

The Civil Defence Forces of the North-West Frontier Province fall into two main groups,—those which are established on the settled side of the border and those which are definitely trans-frontier corps. Of the former, there are first the village pursuit parties, or *chighas*, who are obliged both by law and by custom to turn out for defence or pursuit whenever a raid occurs. Government provides the villages in areas liable to be raided with a certain number of rifles, for purposes of defence, but does not attempt to supervise the *chighas* or enrol them in the service of the Crown. To co-operate with these *chighas* when more prolonged operations are necessary, selected members of the village communities are organized into levies, drawn from the same sources as the *chighas*, but pledged to full or part time service, and receiving arms, ammunition, and pay from the Indian Government, either directly or through the local *khans* who often act both as officers and organizers of the corps.

The District Police exist on the border just as in every other part of British India, but the unsettled conditions there render it necessary for them to be better armed than other civil police forces; otherwise their work differs little from that of the District Police elsewhere. But the backbone of the defence on the administered side of the border is the Frontier Constabulary. This force stands between the Police and the regular military forces, and its main function is the prevention of raids and the capture of raiders and outlaws. It patrols the border and ensures the safety of roads and communications generally. Its British officers are members of the Imperial Indian Police seconded from their own service. Its posts are mainly on the edge of administered territory, but many of its operations take place across the border.

The Trans-Frontier Civil Corps are three,—the Kurram Militia, the Tochi Scouts, and the South Waziristan Scouts. The Kurram Militia is a force mainly raised locally to preserve order in the Kurram Valley, which is only a semi-administered area. The Tochi Scouts and the South Waziristan Scouts are intended to maintain British political control in North and South Waziristan respectively, and to prevent raiding through Waziristan into the settled districts. They recruit only a very small proportion of local tribesmen. All three corps are officered by British officers seconded from regiments of the Indian Army. In addition, two other forces, whose

functions and organization are not dissimilar to the rest, require mention, namely the Zhob Militia and the Chitral Scouts.

The *khassadars* are tribal levies raised for the Agency tracts to act as tribal police and to protect communications through their tribal territory. They are more highly paid than either the Levies or the Police or Constabulary, partly because they have to find all their arms, ammunition and equipment, and partly in order to attract the best men to the service and to secure their good behaviour and that of their fellow tribesmen by fear of pecuniary loss. Hitherto, they have been employed only in the Khyber Agency, in the Kohat Pass,—through which runs the road from Peshawar to Kohat, the next British District to the South,—and in Waziristan, where the length of the new communications and roads makes it necessary to employ over 3,500 men.

To revert now to the question of the pacification of Waziristan. It is gratifying to be able to say in general of the year under review,—as of the recent years preceding it,—that the new civilizing policy proceeded satisfactorily. An event of some importance was the completion of the road from Sarwakai to Wana, and Wana itself was reoccupied without incident in November. Except for one incident the year has been comparatively peaceful. This occurred in June 1929, and was very regrettable. Lieutenant Stephens and Assistant Surgeon Cabral were murdered by one Bostan, who succeeded in effecting his escape.

As regards the other portion of trans-border territory, namely that stretching from Waziristan to North of the Kabul River, only a few events worthy of mention occurred. A satisfactory occurrence was the signature in April 1929 of a truce between the leading Turi Maliks and the Maidan Jaji Maliks, which was arranged to last for two years or until the re-establishment of regular administration in the Southern Province of Afghanistan. The Shiah Orakzais, who had been expelled from part of their lands in Tirah in circumstances explained in the Report of 1927-28, continued to maintain their line of defence during the year under review, despite efforts made by the Sunni lashkars to dislodge them. A representative *jirga* was held at Peshawar in June 1929, in the hope of securing a settlement, but negotiations broke down after six days of fruitless discussion. Renewed efforts, however, resulted in an agreement being concluded at a *jirga* held at Kohat on the 29th March 1930. In conformity with that agreement the restoration to the Shiahs

of the lands held by them prior to 1927 began. The peace of the Kurram was disturbed during the year by an incident on the Tirah border of the valley in April 1929, when Haji Khel and Khani Khel Para Chamkhanis encroached into Kurram territory and fired on a patrol of the Kurram Militia, inflicting casualties. Punitive measures were soon after taken against them, and the tribesmen were attacked by a force of Kurram Militia and Tochi Scouts, supported by regular infantry and artillery. The Para Chamkhanis were decisively defeated and compelled to accept the terms of Government.

Conditions in Baluchistan during the year were satisfactory, despite two factors which might well have occasioned difficulty, the first being that the agricultural population suffered severely from drought, floods, and locusts, and the second being the civil war in Afghanistan. On the 23rd of May King Amanullah and his brother Sardar Inayatullah Khan, with their wives and a following of some seventy Sardars and attendants, crossed the border at Chaman as refugees. Though their arrival was unexpected, prompt measures were adopted for their housing and protection, and a special train was subsequently assembled in which the whole party was transported to Bombay. The sequence of events in Afghanistan naturally caused considerable anxiety during the year, and its reactions were felt throughout the Province, but most severely in the Quetta-Pishin district, where a number of incidents occurred which could not have been foreseen and which called for prompt action on the part of local authorities. There were indeed occasions when the tribesmen on the Indian side of the frontier were with difficulty restrained from embarking on armed intervention in the internal affairs of Afghanistan. A noteworthy event of a different kind was that the extension of the Zhob Valley Railway to Fort Sandeman was opened to passenger and goods traffic early in the year.

The position of the North-West Frontier Province in relation to the constitutional reforms established throughout the rest of British India has for some years been a matter of controversy, and readers will recall that last year reference was made to discussions which had taken place in the Legislative Assembly on the subject. The military importance and other peculiar circumstances of the Province of course render the whole question extraordinary difficult. On the 11th of March, 1930, the matter was again raised in the Assembly by Mian Mohammad Shah Nawaz. Most of the speakers

in support of his motion for the introduction of constitutional reforms were Muslims, and all the usual arguments on the subject were employed. Raja Ghazanfar Ali Khan made the concrete suggestion that the Government without waiting for the Report of the Statutory Commission, should set up a Council on the Morley-Minto model as a first step towards further developments. The motion was eventually carried against the Government without a division.

Readers will recollect that in previous editions of this Report some space has been devoted to a consideration of the Anti-slavery operations of the Government of India on the North-Eastern borders of Burma. During the year under review these operations have been maintained, but the duties of the expeditions which are sent to the affected areas now mainly consist in consolidating the good work already achieved. During the years 1927, 1928, and 1929, as was explained in the memoranda submitted to the League of Nations, nearly 9,000 slaves were released in the Hukawng Valley and the "Triangle," at a cost of over Rs. 5 lakhs, and each year careful investigations have been made by the officers in command of the expeditions concerning the conditions of the slaves who had previously been released. Generally speaking they have been found to be living contentedly and on good terms with their former owners, and many have now built houses for themselves and are cultivating their own fields and settling down independently. It appears that their former owners have tended to assist *ex*-slaves towards building houses in their own villages, no doubt with the lingering hope that they may revert to slavery if there is any relaxation in the present system of investigation. But the *ex*-slaves each year become increasingly conscious of their freedom, and although large numbers,—owing to the fact that they have now lost touch with their former homes and relations,—are disinclined to leave the villages of their enslavement, they realize that they can obtain redress for any ill-treatment they may have received during the year by putting the matter before the commander of the annual expeditions. About half the released slaves have been found to be still living in the localities in which they were originally discovered, while about 23 per cent. have migrated to other villages in the administered territories, and a similar proportion to unadministered parts of the country. In addition to maintaining a satisfactory check on the large number of released slaves, 133 newly-found slaves

were liberated by the expedition which visited these districts during the year under review.

Besides dealing with the numerous detailed matters arising out of the existence of tribal peoples on the Frontiers, and with the larger problems of India's international and inter-Imperial relationships, the Foreign and Political Department serves as the link between the Government of India and the Indian States. The question of the position of the States *vis-à-vis* the Government, and in relation to the new constitutional developments, has become more prominent during recent years and has attracted a steadily increasing amount of public attention. It will be recollected that in last year's Report the activities of the Indian States Committee were described, and it was mentioned that the Committee's report was laid before Parliament on the 16th of April 1929. Since that date the Government of India has been engaged in receiving the views of Durbars, local Governments, political officers and other persons on points arising out of the report which were referred to them for comment, and in February 1930, important discussions took place in the Chamber of Princes upon the Report as a whole. Thus by the end of the period under review the Government of India was in possession of the views of practically all the groups and individuals concerned, and had begun to formulate its own considered opinions. In some important respects of course these opinions were bound to remain fluid until the report of the Statutory Commission was published, but the object, both of the Government and of the Standing Committee of the Chamber of Princes,—which had also been busily engaged on the question,—was to advance the preparation of their conclusions as far as possible so that all parties might be adequately equipped for the discussion at the Round Table Conference in London.

We may now turn to a consideration of the organization and recent achievements of the defence forces of the country, that is to say of the Army, the Royal Air Force, and the Royal Indian Marine. The military forces in India consist of the Regular Army, which includes units from the British Army, the Territorial Force, and the Auxiliary Force. These, together with the Royal Air Force and the Royal Indian Marine, are all under the authority of His Excellency the Commander-in-Chief, who is also Army Member of the Executive Council. Besides these various organizations for defence, there are the forces under the control of the

Rulers of the Indian States, the aggregate strength of which amounts to about 36,000. For administrative purposes the military forces for which H. E. the Commander-in-Chief is responsible are divided into four units, the Northern, Southern, Eastern, and Western Commands, and in addition there is the separate Burma District, which for geographical reasons cannot be conveniently merged in the Eastern Command. The strength of the British Army in India is approximately 58,000 officers and men. The Indian Regular Army consists of about 132,000 troops in service and 34,000 reservists, and is an extremely complex and varied organization. The great majority of the officers are British. Roughly speaking about two-thirds of the Indian non-commissioned officers and men are Hindus or Sikhs, and one-third Muslims, and by far the largest numbers are recruited in the Northern parts of the country. Of the various ethnic types represented, the most important are the Punjabi Mussalmans, the Gurkhas, and the Sikhs; the Dogras, Rajputs, and Jats; the Pathans, the Mahrattas, the Garhwalis and Kumaonis,—all of which have a splendid record of loyalty and of success in arms in the numerous campaigns they have undertaken during the last century or so throughout the world. The total establishment of the British and Indian Armies in regular service under H. E. the Commander-in-Chief, including Services and Departments, amounts to about 194,000 men, which represents a proportion of one soldier for approximately every 1,650 members of the country's population. In addition to the regular forces there are the two volunteer organizations, namely, the Auxiliary Force, which is recruited solely from Europeans or Anglo-Indians and has a strength at present of about 32,000, and the Territorial Force, which totals about 16,000 men, and except for some of its officers is of purely Indian composition, and consists of various Provincial and Urban units, the University Training Corps, and the Medical Branch.

In an Appendix to our Report last year a detailed description was given of certain changes which had been taking place in the organization of the military forces in the country, particularly in connection with what is known as mechanization. The normal improvements and replacements of the Army's equipment had naturally been curtailed as a result of the Government's acceptance of the military recommendations made by the Indian Retrenchment Committee in 1923, and the time had come when it was unsafe to

allow this process to continue further. Steps were accordingly taken to make good the shortages,—which had been foretold at the time of financial stringency when the Committee's recommendations were accepted,—and to bring the equipment of the armed forces in India more into line with that which had been evolved in Great Britain, and in foreign countries, as a result of the rapid advance in the adaptation of mechanical invention to military needs. During the year under review considerable progress was made in the programme of mechanizing certain combatant and transport units, which we described in our Report last year, and in particular in the replacement of 4-wheeled by 6-wheeled motor vehicles, which have been proved to be much the more effective type for cross-country work. To facilitate the provision of the large number of 6-wheeled lorries which would be required in an emergency, a Government subsidy scheme was started, and although there was not time for this scheme to have much practical result during the year under review, it should prove of value in subsequent years. As a result of the mechanization of transport units, there has naturally been a considerable reduction in the establishment of animal transport. A good deal of re-organization of a more general kind was also effected during the year, in order that there might be greater conformity between the structure of the various military units in this country and Great Britain. British cavalry regiments in India have been organized on the basis of a headquarter wing, two sabre squadrons and one machine gun squadron, and cavalry regiments of the Indian Army on the basis of a headquarter wing which includes a machine gun troop, and three sabre squadrons; and the organization of the infantry battalions of both Armies has now been rearranged so as to consist of a headquarter wing, three rifle companies and one machine gun company. The whole structure of the Pioneer units of the Indian Army has also been changed, all the four regiments having been reorganized as Corps corresponding to those of Sappers and Miners. The Madras, Bombay, and Sikhs Pioneers have now each a Corps Headquarters, consisting of a headquarter wing and two training companies, as well as two active battalions each consisting of battalion headquarters and three companies; while the Hazara Pioneers is composed of battalion headquarters, three active companies and a training company.

During 1929-30 troops were required to stand to in aid of the civil power on 37 occasions, the majority of which occurred in what

was known as "Independence Day," namely the 26th January, 1930, when in point of fact no untoward incident occurred; a few occasions calling for the support of troops were also anticipated in connection with religious festivals liable to provoke inter-communal disturbances. But the actual use of troops was required on four occasions only, the most important of which was during the riots in Bombay in May 1929, when military picquets had to be posted in the city, but fortunately no serious clashes with the rioters took place.

The Royal Air Force in India consists of 8 Squadrons of "army co-operation" or bombing aeroplanes, and a Flight of heavy transport machines. There is in addition the Aircraft Depot and the Aircraft Park, whose functions consist in erecting and overhauling aircraft and acquiring and distributing stores. The total personnel of the Force now amounts to about 2,200 British officers and men and 1,200 Indians. As has already been explained, the organization is under the ultimate control of H. E. the Commander-in-Chief, but its administration is in the hands of the Air Officer Commanding in India. Considerable changes were effected in the organization and strength of the Force during 1928, which were fully described in our Report last year, and during the period under review no further alterations of importance occurred. The policy has been to arrange that the organization of the Force in India shall correspond in all essential details with that in Great Britain, so that there should be no lack of co-ordination in the event of war; on their present basis, the Squadrons would be easily interchangeable. Geographically, the combatant arm of the Force in India is concentrated almost exclusively in the North-Western portion of the country, one Squadron being stationed at Ambala, and the rest distributed along the Frontier between Risalpur and Quetta. Each Squadron consists of 12 aeroplanes, and during the year under review two more squadrons,—making 4 in all out of a total of 8,—were equipped with machines of the Westland Wapiti type in substitution for the old D. H. 9.-A. aeroplanes.

There is no need for us to emphasize the enormous potentialities of the air arm in war, but perhaps it will not be out of place to draw attention to the particular importance which it possesses in this country. To begin with, India is an essential link in the chain of aerial communications between Great Britain and Australia, and

although at present the link appears safe from all reasonable likelihood of attack, the risk of it occurring must not be altogether discounted, in view of the possibility that the effective striking range of aircraft may within a comparatively short time be considerably increased. Again, should serious internal disorder arise, the value of aircraft in this country would be great, owing to the speed with which they can convey men or stores from one corner of the country to another, and the fact that as compared with the more developed States of Europe or America, the system of roads and railways in India is disproportionate to the magnitude of the population. The capacity of modern aircraft for undertaking heavy transport work on a large scale was amply demonstrated during the disturbances in Afghanistan during the winter of 1928-29, when 568 people were safely removed to India from the distracted city of Kabul. Yet another way in which the Royal Air Force can render important services to the country is in dealing with sporadic unrest and disorder in inaccessible localities on the Frontier, and on several occasions submission has been enforced and order restored by bombing operations. During the period under review, aerial demonstrations were made on four occasions against sections of tribes which were giving trouble to the Government; and in each case they came to terms.

Apart from their purely military value, the uses of aircraft for peaceful purposes have received remarkable confirmation during the year,—if such was necessary after the occurrences of December 1928. As will be remembered the bursting of the Shyok Dam in the Karakoram Range during the summer of 1929 was followed by an unprecedented rise in the level of the Indus, which threatened more than 50 villages with devastation. The Royal Air Force was requisitioned to patrol the affected area and to warn the inhabitants by distress signals of the approaching danger. The flooded regions were photographed from the air, and during the interruption which occurred in the normal mail service between Quetta and Karachi, the Force undertook the transport of mails by aeroplane. Another interesting though minor illustration of the use of the Air Force for humanitarian purposes was the successful conveyance from Fort Sandeman to Quetta, by air, of a sick soldier who required an immediate surgical operation. Owing to the urgency of the case, the flight was begun towards evening, and a night landing had to be made at Quetta.

Considerable progress was made during the year in the consolidation of the Imperial air route from Britain to Australia. Experimental journeys were made by flying boats between Basra and Karachi and between Singapore and Calcutta; and work was also continued on the improvement of intermediate landing grounds.

During December 1929, Air Marshal Sir Geoffrey Salmond, K.C.B., K.C.M.G., D.S.O., who has been in command of the Royal Air Force in India since December 1926, carried out an extensive tour in the Southern part of the country in a Hinaidi aeroplane, with the object of studying flying conditions in general, and the capabilities of heavy transport machines in particular, in this region Direct wireless communication was maintained with Delhi throughout the tour by means of a portable ground transmission set. Another noteworthy event of the period under review was the arrival in Karachi on the 26th April 1929 of the Fairey monoplane piloted by the late Squadron-Leader Jones-Williams, M.C., and the late Flight-Lieutenant Jenkins, O.B.E., D.F.C., D.S.M., after a non-stop flight of 4,130 miles in slightly over 50 hours from England to India, which for the time being created a new British record in long distance flying. Mention must also be made of an interesting flight made by two aircraft of the Royal Aeronautical Service of Siam. After leaving Bangkok, the machines proceeded *viâ* Rangoon and Akyab to Calcutta, Allahabad, and Delhi, and the officers in charge of them subsequently visited various Royal Air Force Units on the North-West Frontier.

The Royal Indian Marine has the distinction of being able to trace its history back to early in the XVII century, when the East India Company established a small naval force to protect its trade routes and factories against foreign foes; and since then there have been numerous occasions on which it has rendered notable services, its record of achievement during the last war, for example, having been,—in relation to its size,—remarkable. But after 1919, owing to a variety of factors which have been indicated in previous issues of this Report, its activities were severely curtailed, and it was not until 1928 that the scheme of re-organization which has been outlined three years earlier by the Departmental Committee presided over by Lord Rawlinson could be put into effect. The circumstances of the change were duly recorded and described in our Report for the year 1927-28; the essence of it was the recognition of the Service by Parliament as one of the unitary fighting forces of the Empire,

and its establishment on a purely combatant basis under the command of a Rear-Admiral on the active list of the Royal Navy. All ranks and ratings of the Service now wear the same uniform as the Royal Navy, except for distinctive buttons having the Crown and Anchor superimposed upon the Star of India. The total authorised personnel of the Service, exclusive of the dockyard workers, is at present 166 officers and 1,012 men; and its ships, all of which except the trawlers have now got their full fighting equipment, consist of 4 sloops, 2 patrol vessels, 8 trawlers, 2 survey ships, and a depôt ship for training purposes; they fly the Blue Ensign with the badge of the Star of India at the bow, and the White Ensign at the stern.

As was explained in our Report last year, Rear-Admiral Walwyn, R.N., arrived in India to take charge of the reconstituted Service in November 1928, with the title of Flag Officer Commanding the Royal Indian Marine; and in June 1929, he issued an interesting general statement upon the condition and progress of the re-organized Service during the first six months of his command. At the outset the force was short of its authorised *cadre* by 11 officers and 254 men; the number of boys under training was only 17, and all ships were very short of complement. To help to make good the lack of men, approval was obtained to replace the trained seamen and stokers,—amounting to 61 in all, who were serving in the Dockyard Police,—by newly entered recruits, so that the former could be drafted to ships. During the first six months of the re-organization a certain number of retired members of the old Royal Indian Marine returned to enrol in the reconstituted Service, but this source of recruitment has now practically ceased, and at the end of the period the Service was still 184 men short of establishment. In former years recruits for the Royal Indian Marine had been derived almost entirely from the Ratnagiri District South of Bombay; but the changes effected in 1928 were largely inspired by the desire that the Service might form the nucleus of a naval force really representative of India as a whole, and it was fully recognized that if this ideal was to be achieved the area of recruitment must be widened. Accordingly, shortly after his arrival, the Flag Officer Commanding organized a recruiting party to tour certain districts of the Punjab, from which a number of enquiries about the Service had been received; and the result was most satisfactory, many hundreds of boys having offered themselves as recruits. Forty-seven were entered for service in April 1929, and another 45 were enrolled in

October 1929. Permission was obtained to enrol the boys under the Indian Marine Act on entry, and they are thus serving on a sound disciplinary basis. The Flag Officer Commanding in his review paid a high tribute to their physique, adaptability and promise.

By the month of June 1929 the ships had all been equipped for gunnery, though considerable delay had been experienced in obtaining the mine-sweeping gear. During April the "Cornwallis", "Clive", "Lawrence", "Baluchi", and "Pathan" left Bombay for a month's cruise down the coast to Karwar, during which a satisfactory course of intensive sea training was carried out, and other independent cruises took place later in the year.

The construction of a building in the Royal Indian Marine Dockyard at Bombay, for use as a Mess by the Officers of the Service who have to vacate their ships when they are under refit, was sanctioned during the year, and the work is now being proceeded with.

The first open competitive examination for the recruitment of Indians for the commissioned ranks of the Service was held in Delhi in June 1929. The number of candidates who presented themselves, namely 29, was gratifying, but unfortunately none of them proved up to standard. A further examination was held at Delhi during the following November, and on this occasion there were 19 candidates of whom 2 were successful. Both were candidates for the Engineering Branch, and were accordingly sent to England in March 1930 for five years' practical training with engineering firms.

In addition to the Royal Indian Marine, there is of course the East Indies Squadron of the British Navy available for the defence of Indian waters. At present the Squadron consists of 3 cruisers, 3 sloops, and a vessel designed for special service in the Persian Gulf.

We must now address ourselves, in an amount of space which, for such a subject, is necessarily inadequate, to a consideration of the relation between the organization of India's forces of defence and her nationalist aspirations. This may fairly be said to be the most crucial and difficult of all the problems with which the country is confronted. There is no need for us at this stage to emphasize, on the one hand, the genuineness and intensity of the nationalist movement in India, which is obviously giving rise to most of the characteristic manifestations of similar movements in other coun-

tries; nor, on the other hand, need we labour the fact that the movement is as yet restricted in its application, and that the proportion of the population which is more conscious of belonging to an Indian nation than to a particular race or class or creed or community is small. But it is upon this fundamental contrast between Indian nationalism and what may be called Indian separatism that the difficulties of the problem of defence, as they confront the country at present, are ultimately based.

No nation, in so far as it is aware of being such, can be content that the responsibility for its defence should be in the hands of what it regards as a foreign power; and from the very outset of the Nationalist Movement its adherents have admitted, at least in theory, that their political aspirations ultimately depend for fulfilment upon the capacity of the country to defend itself without extraneous help. A study of the proceedings of the earlier meetings of the Indian National Congress reveals the constant recurrence of the accusation that the British Government had, by "disarming and emasculating the people", placed serious obstacles in the path of political progress. But there was,—and indeed still is,—little real demand on the part of these classes for a military career; and few were the politicians who attempted to grasp, by systematic and patient study, the practical aspect of the problems upon which the defence of India depends. Recently, however, the intelligentsia of the country has been compelled, partly by the lessons of the war, and partly by its ambitions towards the attainment of Dominion Status and the necessity of putting forward its case in the Legislatures, to grapple with these questions more closely. There is an increasing realization of the fact that if the control of Indian affairs is not to be left permanently in the hands of the British, she must be in a position to prove her ability to undertake the management not merely of the civil administration but of the forces of defence. Accordingly, in place of the old vague military aspirations, the educated classes now put forward two concrete demands. They ask in the first place for the rapid Indianization of the commissioned ranks of the regular Army; and secondly for the extension of the facilities which already exist for training Indians in the Territorial Force. At the same time, there is an insistent complaint that the expenditure incurred on the defence of the country is excessive, and that a larger proportion of the available revenues should be employed for "nation-building" purposes.

In our examination of these questions, it will be convenient to devote ourselves first to considering the third of them, namely the question of effecting a reduction in the sums spent on defence; and to assist the reader in understanding the details of the various problems involved, we have reproduced, in Appendix III, extracts from the speeches respectively made by H. E. the Commander-in-Chief, and by the Secretary to the Army Department, in the Council of State and the Legislative Assembly, during the Debates which took place on the Military Budget in March 1930. Now it is unquestionable,—and the point will be clearly brought out if the reader will refer to the diagram reproduced opposite page 272, —that the proportion of India's annual revenues which is spent on her defence is large; it forms, in fact, substantially the biggest single item of expenditure in the whole Budget. Out of a total net revenue, from both Central and provincial sources, of about Rs. 220 crores per annum, sums no less than from Rs. 50 to Rs. 60 crores are absorbed each year by the defence services. Amid the rising tide of emphatic but sometimes ill-conceived criticisms that are made on the subject of this expenditure, four main lines of argument may be discerned. Firstly, there is an appeal to principle: it is urged that, since military expenditure, from the point of view of accepted economic theory, is entirely unproductive, and contributes nothing to a country's general wealth and welfare, much more strenuous efforts than any that have hitherto taken place should be made to reduce it; that India simply cannot afford to disburse such lavish sums for the upkeep of her defence forces when the general state of the country, and in particular the standard of living and the productivity of the poor, call for such obvious and drastic measures for improvement; and that the general economic state of the country is such that certain risks must be taken, such as other nations in economic difficulties have exposed themselves to in the past. Closely associated with this is the contention that military expenditure such as has become customary in this country directly inhibits the application of revenue to "nation-building" ends, and that in consequence India's national aspirations are probably by design and certainly in fact frustrated by the magnitude of the army she is forced to maintain. This leads us to the third point, namely, the argument that the risks of attack to which the country is exposed are actually not nearly so grave as the military authorities for their own purposes make out: that

the possibility of aggression from the sea may in present circumstances be eliminated; that the likelihood of incursions through the land frontiers of the East, North-East, and North is negligible; and that the only real danger lies in the chance of conflict with untrained, ill-equipped and nomadic tribesmen in the North-West, whose total fighting strength, even when they are able to combine, could not exceed 750,000 men. The fourth point is the allegation that the military forces in the country are used less for the service of India than as an Army of occupation available for the defence of British Imperial interests; and in particular that the maintenance of such large numbers of British troops in this country is in itself unnecessary, and that their primary function is to form a hidden reserve for the forces at home. The argument finally narrows to a discussion of the question whether in accepting the recommendations of the Indian Retrenchment Committee, the Government committed itself to reducing the Military Budget to Rs. 50 crores,—a figure which it has not yet reached.

We then move to the question of the Indianization of the commissioned ranks of the Army, and the improvement in the scope and status of the auxiliary forces. In this connection it is argued that whereas in the civil Departments some progress may be admitted to have been made towards fulfilling the Declaration of August 1917,—whereby Parliament undertook that Indians should be increasingly admitted to all branches of the administration,—no sincere or substantial attempt has been made to implement this policy in the military side; and that the object of this inaction on the part of the Government is to prevent the formation of an Indian national army, and perpetuate the dependence of the country on British military officers for the management of its forces of defence. In particular, attention has been concentrated of late years on the policy of the Government in connection with the recommendations of the Skeen Committee, which *inter alia* urged the abolition of the "Eight Units" scheme initiated by Lord Rawlinson in 1923, and the establishment of an Indian "Sandhurst" by 1933. The object of the "Eight Units" scheme was that instead of drafting young Indian officers indiscriminately to all sections of the Army, attention should be concentrated at first on the progressive Indianization of eight units only, and it is contended that, in rejecting the recommendation for its abolition, the Government has been actuated by racial discrimination based on the desire that British

officers shall not be required to serve in subordination to Indians, and that the possibility of thoroughly Indianizing the higher ranks of the Army as a whole has thereby been deferred for an indefinite period. As regards the establishment of an Indian "Sandhurst", it is argued that by refraining from declaring its policy in the matter the Government has indicated that it does not desire to proceed with the scheme; and in so far as the number of vacancies already set aside for Indians at Sandhurst, Woolwich and Cranwell are concerned, it is alleged on the one hand that these are insufficient, and on the other, that inadequate steps are taken by the Government to encourage suitable candidates to enter for them, and in addition that those who do compete, especially for the vacancies at Woolwich and Cranwell, are subjected to unfair discrimination of various kinds. Criticisms of the Government's action in the matter of the Territorial Force are as a rule based on the argument that what has hitherto been done is half-hearted and parsimonious, and that an active policy for expanding the size, equipment and activities of the Force,—supplemented by arrangements for inculcating military discipline and physical training in the schools,—must be at once embarked upon, if the ardour and aspirations of Indian youth are to be harnessed for the service of constituted authority rather than diverted into revolutionary channels.

The answer of the Government to these various criticisms has been set forth in some detail in previous issues of this Report, and part of it will be found recapitulated at the end of this volume, in the Appendix to which the reader has already been referred. But it will not perhaps be out of place at this stage if we indicate briefly, and in broad outline, some of the more outstanding points which are raised, by no means exclusively on the part of officials or recognized supporters of the existing administration, in opposition to the line of argument we have hitherto been summarizing. The first fact to bear in mind is that the dangers which the defence forces are intended to withstand are very much more serious and substantial than opponents of the Government are wont to assert,—as the reader will readily realize from his recollection of the problems to which we drew attention at the beginning of this Chapter. And apart from the peculiarities and magnitude of these dangers, it might well be argued on general grounds that an annual expenditure of Rs. 55 crores,—or about £41,000,000—on the defence of a country as large and populous as the whole of Europe excluding

Russia, is not on the face of it excessive. The military budgets of France, Germany, and Italy alone now amount each year to about £64,000,000, £34,000,000, and £28,000,000 respectively; the United States, with a population scarcely more than a third as large as India's, and with land frontiers whose liability to violation is negligible, spent £61,000,000 solely on her army in 1929; and the expenditure of Soviet Russia, whose total inhabitants, despite her geographical immensity, amount to no more than about 140,000,000, had risen from approximately £41,000,000 in 1925 to £84,000,000 during the year under review. The case of Russia is peculiarly instructive, since as compared with the other States we have mentioned, the standard of living among her predominantly rural population is more analogous to that of the Indian masses; yet despite the armaments which she nevertheless maintains, and the facts that her borders march in close proximity to those of India, and that she is not a member of the League of Nations, it is, as we have seen, asserted that the meagreness of the average individual income in India in itself constitutes a complete justification for a substantial cut in military expenditure. To this contention the authorities retort that the reduction which has already been effected since 1923, when the figure stood at over Rs. 65 crores as against the Rs. 55 crores or less which are at present required, has brought the forces of defence to a state beyond which, under existing conditions, the margin of safety would be overstepped; and that although the poverty of the Indian masses is a deplorable fact which all reasonable steps must be taken to alleviate, the extent of a people's average income per head has no bearing at all on the question of their natural vulnerability.

In so far as the total military, naval and aerial armaments of Western Europe, exclusive of Russia, are concerned, it might not be difficult to demonstrate that their cost is so vastly in excess of anything that India has to pay, that her inhabitants contribute not only actually, but also in proportion to their income, less than do the people of the West towards the maintenance of the forces upon which their security depends. Europe, of course, is split up into a number of politically separate members, while India, thanks to the British *Raj*, is relatively unified; but it must be remembered that the unity is largely superficial, and that she has to maintain within her borders large numbers of troops to deal with the internal disturbances by which it is liable to be destroyed;

whereas in the States of Europe the military are required almost exclusively for external purposes. Were the existing arrangements for the defence of India to be seriously impaired, she would not only be deprived of the means of coping with external foes, but might quite conceivably disintegrate into a number of mutually hostile units, which would necessitate the maintenance of armaments on a much larger scale than at present. Moreover, should British good-will be forfeited, and her protection withdrawn, so would be that of the British fleet, for whose maintenance the contribution India makes is so small as to be out of all proportion to the services it renders her; and in view of the natural vulnerability of her coasts, to which attention has already been drawn, she would consequently have to face the prospect either of attack or of heavy expenditure in this direction also. Thus it is contended that there is no question whatever of the expenditure on defence being designed, by its magnitude, to starve the "nation-building" services, and that the plain fact is that were the military budget under present circumstances to be reduced substantially below the existing level, all prospect of building a nation, or even of maintaining a reasonably efficient and satisfactory administration of any kind, would be jeopardized to an extent which would constitute a complete abnegation of statesmanship and sanity on the part of those responsible for the welfare of India's inarticulate millions.

We now turn to the question of the Indianization of the Army. The official reply to the criticisms of the Government's policy in this matter is set forth in Appendix III; but here again some more general remarks based on the points raised independently by private individuals in the Legislatures, the Press, and elsewhere, as well as by spokesmen of the Government, may not be inappropriate. The fundamental problem to which attention is drawn at the outset is the extraordinary difficulty, indeed the impossibility, of establishing a coherent, efficient, and reliable Indian national army within the time desired by the critics of the Government. To start with, there are such immediate practical difficulties as questions of seniority and promotion: even were it possible or desirable to embark on such a drastic policy of Indianization as would enable the recruitment of British subalterns to the Indian Army to be stopped altogether, and the vacancies to be allotted exclusively to Indians, it would nevertheless be impossible by any of the ordinary processes of continuity such as are necessary to the

maintenance of military efficiency, to obtain an army of purely Indian composition until the Fifties of this century at the earliest, owing to the time which must elapse before a subaltern in the normal course of events is able to earn command of a regiment. But in any case to entertain such an idea is at present of no more than academic interest, if only because of the difficulty of obtaining, even for the existing number of vacancies at the Cadet Colleges, a sufficiency of candidates fitted by education, physique, and character to hold the King's Commission. From 1919, when Indian cadets were first admitted to Sandhurst, until 1928, the supply of qualified candidates was always short of the vacancies reserved for them, and it was not until the year under review that properly competitive conditions were established. The original allotment of vacancies was considerably increased in 1928, as a result of the acceptance of the recommendations of the Skeen Committee on this point; the colleges at Woolwich and Cranwell, in addition to Sandhurst, are now required to set aside a certain proportion of vacancies each year for Indian cadets qualifying for King's Commissions, and the total number of openings now available amounts to 20 at Sandhurst,—with 5 additional vacancies for cadets holding Viceroy's Commissions,—to 6 at Woolwich, and such number at Cranwell as is required to officer an Indian Air Squadron; at present 6 Indians are at Cranwell. But any decision to effect a further increase of vacancies must obviously depend on the question whether there is likely to be a steady and sufficient flow of suitable candidates for them; and this consideration should apply with even greater force to the project of establishing a college on the lines of Sandhurst in India, owing to the much greater expenditure which it would entail. It must moreover be remembered that the whole policy of Indianizing the higher ranks of the Army remains at present in an experimental stage; to consider whether the experiment might not have been initiated earlier is irrelevant; the fact to be faced is that only 10 years have elapsed since the innovation was made, and that in the nature of things its consequences cannot as yet be fully seen. It was for this reason and no other, that the Government determined, despite the recommendations of the Skeen Committee, to proceed with the "Eight Units" scheme, since it alone provided the machinery whereby portions of the Army might be completely Indianized and their comparative efficiency tested within a measurable time.

There would be few reasonable men who would deny that a country's forces of defence form a less legitimate field for radical and far-reaching experiments or alterations of policy than any other part of the public services, owing to the appalling consequences to which the whole community would be exposed in the event of the changes proving ill-founded; and the supporters of the Government's policy urge that the peculiarities of the problem of defence in India provide ample justification for the caution hitherto exercised in acceding to nationalist aspirations in military matters. Apart from the reality and complexity of the external dangers to which we have already referred, and which need no emphasis, there is the fact that the multiplicity of racial, religious and linguistic differences in India must inevitably prove for many years to come a grave obstacle to the creation of anything in the nature of a genuine national Army upon which the population as a whole could rely. And one aspect of this fundamental internal difficulty requires especial attention, namely the extraordinary variations which exist,—and which are probably unparalleled in any other comparable area on the surface of the globe,—in the amount of natural military aptitude possessed by the country's different inhabitants; amongst them are included races which are entitled to be considered amongst the most formidable fighting forces in the world, and others which alike by their physique and traditions are rendered practically incapable of resisting military aggression of any kind. The contrast is clearly brought out by a cursory examination of the geographical origins of the recruits obtained for the Army. About 30 per cent. of the total area of India exclusive of Burma,—that is to say the Punjab, the independent State of Nepal, the United Provinces, the State of Jammu and Kashmir, and the North-West Frontier Province,—provides about 84 per cent. of the troops, whereas such vast and populous regions as the Presidencies of Bombay and Madras, for example, together furnish only about 13,000 men, the Central Provinces, and Bihar and Orissa, a mere 500 in the aggregate, and Bengal and Assam, none at all. It is sometimes alleged that these discrepancies are due not so much to real differences in capacity for a military career as to a tendency on the part of the authorities to recruit almost exclusively from certain races and classes which they themselves, for purposes of their own, happen to prefer; but the whole course of Indian history prior to the establishment of the British *Raj* is

sufficient to give the lie to this contention,—quite apart from mere personal observation of the characteristics of the peoples concerned; it may moreover be recalled that during the emergency of 1914-18, when there were the strongest possible reasons for accepting satisfactory volunteers from even the more unlikely parts of the country, the recruits obtained from the traditionally unmilitary Provinces such as Bengal were numerically negligible in comparison with those that came forward in the North and North-West. The existence of these extreme differences in the military capabilities of the population puts difficulties in the way of the rapid formation of an Indian national army which it is impossible to ignore; nationalists find that the martial races upon which the country's defence to a large extent depends are as a rule singularly impervious to political idealism, and have a strong preference for the leadership of officers whose race or family is such as to suggest their possession of inherent military aptitude. But this is only an initial obstacle. There is a much larger problem ahead which must be frankly stated; were the course of Indian history during the next few decades to be such as to produce the collapse of the existing administration, or even were drastic measures for Indianizing the Army to be undertaken out of impatience and ignorance, a situation might well arise in which discipline could no longer operate, and the unmilitary inhabitants of the country would find their lives and property at the mercy of armed but disorderly warriors who acknowledged no natural or political kinship with them. This possibility leads us to the question whether the present dimensions of the British Army in India are justified. Supporters of the Government would urge that a country so profoundly divided by racial and religious differences as India ought on principle to have within her borders some such impartial co-ordinating force as the British Army provides, and that in relation to the country's total population the actual establishment maintained cannot reasonably be considered excessive, since as a rule it does not amount to more than 1 British soldier for every 6,000 inhabitants. It is a generally admitted fact that British troops prove extraordinarily helpful in times of internal disturbance, since there are no reasons whatever why they should tend to favour either of the conflicting parties, and their ability to maintain even-handed justice in these circumstances is widely recognized. In consequence it has become increasingly the custom, when serious communal

disorders occur, that the British troops should be called in to deal with them.

As regards the Territorial Force, there is very wide realization, on the part of the supporters as well as the opponents of the Government, of the important part it can play in fostering the desire for national service in the minds of the people, and providing a focus for activities which might otherwise be diverted into unsatisfactory courses; at the same time it is essential to bear in mind the fact,—which the critics of the Government are wont to overlook,—that from its very nature the Force is neither intended nor able to act as a substitute for the Regular Army. It would therefore be extremely difficult either on grounds of principle or expediency to justify a lavish increase in the expenditure on the Territorial Force at a time when the cry is all for a reduction in the cost of the Regular Army,—and when in actual fact it has been lowered by approximately 16 per cent. during the last 7 years. As a result of the recommendations of the Auxiliary and Territorial Forces Committee the establishment of the Force has already been considerably expanded during the last few years, four Urban Units and three new University Training Corps Units having been constituted in 1928. The latter have made a very satisfactory start; but in so far as the urban units are concerned the results have hitherto been disappointing, and little interest has been displayed except in connection with the unit in the United Provinces; the Bombay Parsi urban battalion, out of an establishment of 725, had at the end of the period under review a strength of 16, and the non-Parsi Bombay Unit, and the Madras Unit, numbered 83 and 75 respectively out of an establishment fixed for each at 346. A substantial improvement in the efficiency of the Provincial Units was however noted during the year under review, largely owing to the arrangements made, as a result of the recommendations of the Auxiliary and Territorial Forces Committee, for ensuring ampler training and providing a permanent staff. The Territorial Force as a whole now consists of 18 Provincial Battalions, 4 Urban Units, 11 University Training Corps Units and a Medical branch. One of its major difficulties hitherto has been the natural dearth of officers adequately qualified to serve in it,—a problem which has been aggravated by the delays which have occurred in granting senior grade commissions, owing to the cumbersome procedure originally prescribed for dealing with applications; the

latter trouble however should soon be rectified. The Provincial battalions at present are each provided with five officers of the Regular Army, and the other units with one.

We will conclude this section by giving a few further details concerning the matters we have had under review which could not conveniently be introduced into a general discussion. As regards the Indianization of the commissioned ranks of the Army, the actual figures for the year were as follows: in June 1929 eleven candidates obtained admission to the Royal Military College, Sandhurst, and a further ten as a result of the examination in November, when six were also admitted to the Royal Air Force College, Cranwell, and two to the Royal Military Academy, Woolwich. During the November examination there were eight other candidates who qualified for admission to Sandhurst but who could not be admitted as there were no vacancies for them. As we have already mentioned, this is the first occasion on which there have been more qualified candidates than available vacancies. In addition to the cadets who gained admission to Sandhurst in the ordinary way, three officers holding Viceroy's Commissions in the Indian Army were nominated by H. E. the Commander-in-Chief to undergo a course of training there with a view to qualifying for the grant of King's Commissions. An event of considerable importance which took place in India during the year, in connection with the recruitment and education of candidates for Viceroy's Commissions, was the opening in July 1929 of the new College at Nowgong, Bundelkhand, dedicated to the memory of Lord Kitchener. The institution is intended to give young and promising non-commissioned officers a thorough course of scientific military training such as would fully qualify them to instruct a troop or platoon in peace and lead it in war; and it should ultimately ensure for the Indian Army a regular supply of active and efficient troop and platoon commanders with high tactical and administrative abilities. A large proportion of the funds required to equip it was generously subscribed by the Ruling Princes of India. The use of the Ordnance Factories as a means for providing technical education progressed satisfactorily during the year, and a considerable number of highly qualified artisans have been turned out under the apprenticeship schemes; the best of them are now being given facilities for obtaining advanced technical instruction in England.

Readers will recall that in our Report last year we mentioned that an arrangement had been made whereby the Military Budget, exclusive of expenditure which might be incurred as a result of the recommendations of the Auxiliary and Territorial Forces Committee, would be stabilized until the year 1931-32 at an annual figure of Rs. 55 crores. During the year under review the period was extended to 1932-33, and from 1930-31 onwards the stabilized figure will,—subject to the sanction of the Secretary of State,—be reduced from Rs. 55 crores to Rs. 54·25 crores.

Having now discussed the question of Defence, both from the diplomatic and military points of view, we are in a position to consider the third aspect of the country's external affairs, namely, her relations with her peoples overseas. This subject,—despite the fact that the number of Indians settled abroad amounts to less than 1 per cent. of the home population,—has assumed an importance during the last quarter of a century which could scarcely be over-estimated, owing to the exceptional difficulty and seriousness of the racial problems to which it has given rise.

Travel outside India is discouraged by orthodox Hinduism, and before the Thirties of last century there seems to have been no appreciable movement of Indians abroad except to such closely adjacent regions as Ceylon, Malaya, and the East Indies. But the abolition of slavery within the British Empire in 1834 created an extensive demand, during the next seventy years or so, for the employment of indentured Indian labour in such widely separated parts of the world as Mauritius, Fiji, the West Indies, and Natal, —while at the same time the existing Indian population in Ceylon and Malaya was substantially reinforced by the immigration of workmen recruited in various other ways. These movements were naturally followed,—as soon as the various communities of Indian labourers abroad had become sufficiently large and permanent,—by a gradual influx of Indian traders, artisans, clerks, and professional men, who were drawn by the possibility of serving the interests of the original immigrants. In consequence it is altogether incorrect to suppose,—as is still sometimes done,—that the settlements of Indians in the countries which imported large quantities of indentured Indian labour during the last century consist solely of uneducated "coolies" and members of the lower classes and castes. Moreover a quite considerable amount of spontaneous Indian emigration has occurred to other regions,—particularly East

Africa,—where little or no indentured labour was ever introduced. In addition, it should be borne in mind that the whole system of indenture was abolished in 1917, and that under the Emigration Act of 1922, emigration of unskilled Indian workers was prohibited except to such countries and on such terms and conditions as might be specified by the Governor-General in Council, and it was provided that any notification made by the Governor-General in Council under the Act must be approved by both Chambers of the Legislature; moreover a standing Emigration Committee, composed of twelve members of the Legislature, is appointed every year to advise the Government on all major questions that arise. Thus the Government and the Legislature can now exercise effective control over organized emigration of unskilled Indian labourers, and can ensure on the one hand that the emigrants shall not be of unsuitable type, and on the other that they should not be despatched to regions in which arrangements for their reception and treatment are inadequate.

The actual number of Indians at present settled abroad is about 2,610,000, of whom 959,000 are in Ceylon, 700,000 in Malaya, 281,000 in Mauritius, 276,000 in British Guiana, Trinidad, and Jamaica, 160,000 in South Africa, 69,000 in Fiji, and 55,000 in East Africa,—the total for the British Empire as a whole being 2,510,000. Thus it will be realized that the problems that have arisen as a result of Indian emigration have hitherto been almost entirely a matter of inter-Imperial, rather than international concern, since no more than 100,000 Indians are permanently resident in lands not subject to the British Crown.

Unfortunately the increase in the habit of travel amongst Indians of the upper and educated classes, and in the tendency on the part of a considerable number of Indian merchants and professional men actually to take up their abode in foreign countries, occurred at a time when the problems arising out of racial differences were causing an increasing amount of tension throughout the whole world; and in consequence the intelligent and cultivated Indian, who was proud both of the civilization and achievements of his own countrymen, and of the fact that he was a member of the mightiest Empire in the whole world,—within whose sway were included peoples of all kinds and creeds, and whose general policy was obviously guided to a large extent by an impartial desire for their welfare and advancement,—began first to come into contact

with Englishmen beyond the confines of his own country at a period when he was liable to find himself treated by the less imaginative among them as an outsider and an inferior. In recent years there seem to have been some indications that this intolerance is on the wane, but it has already had grave and far-reaching repercussions, and caused serious disillusion and resentment amongst such non-European subjects of the British Crown as might naturally expect, owing to their own high standards of civilization, to be placed on an equal footing with Europeans. The gravity of the problems raised by this state of affairs, from the point of view of the future solidarity of the Empire, have received increasing attention of late, as for instance in the resolution of the Imperial Conference of 1921, which recommended that the rights of Indians to equality of citizenship should be recognized; and the improvements which have consequently been effected in the status and circumstances of Indians abroad are, as we shall shortly see, substantial. Nevertheless it cannot be denied that there still exist considerable disharmonies between the ideals of fellowship and justice, upon whose fulfilment the natural coherence of the Empire must ultimately depend, and the treatment actually meted out to Indians in some parts of it.

Apart from the psychological aspect of the problem, which is really the most fundamental and difficult of all, the practical disadvantages from which Indians still suffer in British territory include restrictions or unreasonable conditions affecting the right to immigrate, or to obtain and retain domicile, exclusion from the franchise,—or alternatively inadequate representation upon Legislative and Municipal bodies and the absence of a common electoral roll,—denial of the right to hold land, to enjoy trading facilities, and to escape from compulsory segregation, and the non-payment of a minimum wage proportionate to the cost of living. These disabilities of course by no means apply throughout the whole Empire. In British Guiana, Trinidad, and Jamaica, Indians have exactly the same status as any other British citizens; in Ceylon and Mauritius also, under their present constitutions, there is no discrimination against Indians on the ground of race. So far as other Crown Colonies or Mandated Territories are concerned, however, racial problems of some gravity have arisen in Fiji, and also in East Africa,—where in Kenya Colony in particular the conflicts between the interests or aspirations of Indian emigrants and

those of other settlers have been pronounced. But perhaps the most delicate and difficult of all the negotiations which the Government of India has had to undertake on behalf of its peoples overseas have been those with the Government of South Africa. The self-Governing Dominions, of course, are themselves fully responsible for the manner in which Indians within their confines are treated, whereas the Crown Colonies, and other units of the Empire, are not; and the Reciprocity Resolution passed at the Imperial War Conference in 1918 affirmed the rights of each community of the British Commonwealth to control, by restrictions upon immigration, the composition of its own population. But although responsible Indians recognize in the abstract the fact that if the self-governing Dominions desire to exclude Indian immigrants they are entitled to do so, and that reasonable complaint can only be raised concerning the exclusion of Indians from the Crown Colonies, it has nevertheless not been easy for them to consider the actual consequences of this discrimination dispassionately when they reflected upon the ideals for which the British Empire is supposed to stand; and their general irritation at the grievances of their fellow-countrymen across the seas is apt to vent itself in criticism not only of Great Britain but of the Government of India in its present form. Thus the practical disabilities to which Indian emigrants have found themselves subjected have not only raised questions of principle which are of vital importance to the future of the whole Empire, and which have taken a prominant place amongst the topics which successive Imperial Conferences since the war have been forced to consider, but have also exercised a profoundly disturbing influence over the currents of Indian internal politics, whose effects can scarcely be expected to subside for some time, despite the sympathetic consideration which the problem has recently been receiving.

Let us now indicate in more detail the progress of events during recent years in those territories in which Indians have complained of treatment incompatible alike with the dignity of India as a part of the Empire, and with their own personal status as subjects of the British Crown. In recent years the circumstances of Indians in South Africa, and the relations between the Union Government and the Government of India, have considerably improved; but during the period immediately after the War, inter-Imperial problems of unusual gravity were raised as a result of a series

of legislative proposals that were put forward concerning the treatment of Asiatics within the Union. In 1921, a Commission appointed by the Union Government recommended the retention of a law prohibiting the ownership of land by Asiatics in the Transvaal, and the withdrawal of the right of acquiring and owning land in the Uplands of Natal. In 1924 the Class Areas Bill was introduced, which provided for the compulsory segregation of Asiatics in urban areas,—though fortunately this measure lapsed owing to the unexpected dissolution of Parliament. In 1924 the Governor-General assented to the Natal Boroughs Ordinance, which prevented the further enrolment of Indians as burgesses. And in 1925 it was proposed to amend the Mines and Works Act in such way as to refuse the grant of certificates of proficiency to Asiatics in certain occupations. Thus the disabilities from which Indians suffered in South Africa, and which, since the time of Mr. Gandhi's first Passive Resistance Campaign in Natal in pre-war days, had always excited peculiar interest, seemed likely to be increased; and as soon as the full implications of this series of discriminatory proposals came to be understood, the resentment aroused throughout this country was widespread and intense. Attention was moreover drawn to the fact that of all the delegates who had attended the Imperial Conference of 1921, those from South Africa alone had dissented from the Resolution to which we have already referred, which admitted, on principle, the claim of Indians settled within territories subject to the British Crown to equality of citizenship. The Government of India accordingly made strenuous representations to the Union Government on the proposed discriminatory legislation against Indians, and late in 1925 sent a deputation under the late Sir George Paddison to investigate matters on the spot. A better understanding between the two Governments resulted from the work of this deputation, and after its return to India in May, 1926, the Government of India agreed to the proposal of the Union Government that a Conference on Indian question should be held in South Africa in the following December; at the same time suggesting that a deputation from the Union should visit India prior to the Conference to study Indian conditions at first hand. This invitation was accepted, and a South African deputation paid a useful visit to India during the early autumn. The Indian delegation for the Conference, which had been selected so as to command public confidence in India and to carry weight

in South Africa, departed shortly afterwards, and as a result of its negotiations a provisional Agreement was attained, which was later ratified. Both Governments re-affirmed their recognition of the right of the Union Government to use all just and legitimate means for maintaining Western standards of life within its boundaries, and the Union Government recognized that Indians domiciled in South Africa and wishing to conform to Western standards of living should be enabled to do so. Those Indians who wished to leave South Africa were to be assisted by the Union to return to India or emigrate elsewhere, and permission to come back to the Union was to be given to those who so desired, provided they exercised the right within a period of three years, and refunded the value of the assistance they had received. The Union Government further agreed not to proceed with the Areas Reservation and Immigration and Registration (Further Provision) Bill, and suggested that the Government of India should appoint an Agent in South Africa to secure continuous and effective co-operation between the two Governments. The Government of India for its part recognized its obligation to look after returned emigrants on their arrival in India.

This Agreement may on the whole be said to have been well received in both countries. The Government of India lost no time in devising and setting in motion the machinery required in India to provide for the reception of those Indians who should decide to return to India, to protect their savings and bonuses, and to settle them in suitable occupations in this country; and as an indication of its earnestness to give effect to the terms of the Agreement, it promptly appointed as its first Agent in South Africa, the Right Hon. V. S. Srinivasa Sastri, P.C., C.H., who had been a member of the delegation which had effected the settlement at the Conference. This action was received with general approval both in India and South Africa, and the Union Government extended an amnesty to all Indians illegally present in the Union. The Union Government moreover was quick to introduce legislation implementing its own undertakings, and when Mr. Sastri arrived in South Africa in June 1927, all that remained to be done was to take action under Part III of the Agreement, which was concerned with the measures required for the general uplift of the Indian community in the Union. Most of the provisions of this part of the Agreement affect the province of Natal, where the majority of

the Indians in South Africa reside, and the Union Government moved the provincial administration to appoint a Commission to enquire into the condition of Indian education in that province, and to suggest means for its improvement. Co-operation with this Commission on the part of the Government of India was provided by the appointment of two educational experts,—Mr. K. P. Kichlu, I.E.S., Deputy Director of Education in the United Provinces, and Miss C. Gordon, of the Madras Educational Service,—to assist the Commission on its investigations.

A satisfactory feature of the situation in recent years has been the spirit of friendliness and good-will which has animated the Union Government in dealing with problems affecting the domiciled Indian community. An example of this occurred in 1927, when a measure known as the Liquor Bill was introduced in the Union Parliament, one of whose Clauses was designed to prohibit the employment of Indians on licensed premises such as hotels, clubs, and breweries; this created consternation, since it threatened to affect the livelihood of no less than 3,000 Indians, but fortunately it was soon announced by the Minister in charge of the Bill that the offending Clause was to be omitted.

Much of the credit for this improved atmosphere is due to Mr. Sastri, whose tact and honesty of purpose earned for him the confidence of the majority of the European community, and an increasing measure of their sympathy in assisting the Indian cause. And not only did he create better relations between Europeans and Indians in the Union, but he succeeded in enlisting responsible Indian opinion in favour of co-operating whole-heartedly in working the Agreement. An illustration of his personal influence with the Indian community was provided by the gratifying response to his appeal for £20,000 for the purpose of establishing a combined teachers' Training and High School in Durban. The institution, which will meet an urgent need, and which is now known as the Sastri College, was formally opened in October 1929.

It will be recollected that shortly before the conclusion of the period covered by our previous Report Mr. Sastri resigned his appointment, and was succeeded as Agent of the Government of India in South Africa by Sir Kurma Venkata Reddi, Kt. Unfortunately, however, the new Agent was compelled by illness to return to India on sick leave in December 1929, and consequently the Indian community in South Africa did not have the benefit

of his services for the whole of the period now under review. During his absence his official Secretary held charge of the current duties of the post. The most important problem that faced the Agent during the year was that which arose concerning the grant of trading licences to Asiatics in the Transvaal. As a result of certain judgments of the Supreme Court upon the legality of the occupation of premises by Indians for trading purposes, the City Council of Johannesburg, since the beginning of 1929, had been withholding the issue to Indians of certificates for obtaining or renewing trading licences. The Council is understood to have adopted this attitude as a result of legal advice, to the effect that the granting of a certificate to an applicant who would thereby be enabled to infringe either a statutory restriction of the rights to occupy premises, or a similar condition of title in a private township, would be undesirable. Although no Indian actually trading in 1929 had had his business stopped by the refusal of the City Council to grant the requisite certificate, the position created by the decision of the Court seemed anomalous, and was in fact a source of considerable uncertainty and risk to the Indian business man. It was therefore urged upon the Union Government both by Mr Sastri, during his tenure of the Agency, and subsequently by Sir Kurma Reddi, that the matter should be placed on a more satisfactory basis; and as a result of this action, and of representations which had been made by the European community, to the effect that the operation of the laws relating to the ownership and occupation of immovable property by Asiatics in the Transvaal should be examined, the Union Government set up a Select Committee of the House of Assembly to enquire into the whole position. Since the investigations of the Committee were likely to have an important effect upon Indian interests in the Transvaal the Government of India had requested the Union Government to postpone, if possible, the start of the Committee's work until Sir Kurma Reddi, who was then on leave, returned to South Africa; but the Union Government declared itself unwilling to adopt the suggestion, since, in its opinion, it was imperative that the existing uncertainty should be promptly terminated; it nevertheless expressed its intention of recommending to the Committee that it should arrange its dates so as to suit the convenience of any special representative whom the Government of India might choose to appoint forthwith for the purpose of watching Indian interests.

The Government of India consequently deputed Mr. J. D. Tyson, I.C.S., who had been Secretary to Mr. Sastri while he was Agent in South Africa, to undertake this task, and to provide the Indian community in the Transvaal with such assistance as it might need for placing its views before the Committee.

In Kenya, some improvements occurred in the relations between the European and Indian settlers after 1923, when His Majesty's Government announced its general policy towards this Colony. It is true that the two problems which had aroused the greatest bitterness, namely the electoral arrangements, and the prohibition of Indian settlement in the Kenya highlands, remained untouched by the announcement; but the Ordinance restricting immigration was not enacted. This concession, although far from satisfying Indian opinion, either in East Africa or in India, at least did something to ease the situation, which was still further ameliorated when the Indian community abandoned its practice of political non-co-operation and selected five members for the Legislative Council.

In 1926, however, the Government of Kenya appointed a Commission to make recommendations concerning the establishment or extension of local government in Nairobi and Mombasa and their environs, and in such other settled areas as might be considered suitable for it. The Commission's report, which was completed in February 1927, contained a number of recommendations relating to Indians, including proposals involving a decrease in the proportion of Indian representation on the local bodies at Nairobi and Mombasa, and the creation of European elected majorities in these places. This caused much resentment among Indians in the Colony and resulted in the withdrawal from the Legislative Council of four out of its five Indian members; and the Government of India submitted representations to the Secretary of State for India on the subject. In the matter of unofficial representation on the Councils of Nairobi and Mombasa, a Committee consisting of European and Indian political leaders was appointed by the Governor of Kenya, to endeavour to arrive at an agreement upon such clauses of the Local Government Bill as involved a difference of opinion between the European and Indian communities. The amendments proposed as a result of this enquiry were all incorporated in the Ordinance enacted in October, 1928, but the Indian

community in Kenya nevertheless decided not to take advantage of the increased representation offered to it on these two municipal bodies until its desires concerning the introduction of a common electoral roll had been to some extent met.

In July 1927 a new and important factor was introduced into the situation by the announcement that His Majesty's Government had authorised the Secretary of State for the Colonies to send to Africa a special Commission to investigate the possibility of securing more effective co-operation between the Governments of the Eastern and Central African Dependencies; and considerable apprehensions were immediately aroused in India concerning the effect which the findings of the Commission might have upon the future status of Indians in these territories. At the beginning of the Autumn Session of the Indian Legislature the adjournment of the Legislative Assembly was proposed in order that the matter might be discussed, and a deputation drawn mainly from both Chambers subsequently waited on H. E. the Viceroy to call attention to the necessity for safeguarding the position of Indians in East Africa. Amongst others, the deputation made a suggestion which was forthwith accepted by the Government of India, to the effect that a small body of selected persons should be appointed to visit East Africa and make a general survey of these territories in relation to Indian interests therein, and to help the resident Indian community to prepare their evidence for the Commission; and Kunwar Maharaj Singh, C.I.E., and Mr. R. B. Ewbank, C.I.E., I.C.S., were chosen for the purpose. Meanwhile arrangements had been proceeding for the constitution of the British Commission to East Africa, and in November 1927 its personnel was announced. In the following month it left England, and after a comprehensive tour returned in May 1928 to prepare its report; this was published in January 1929, and was signed by the whole Commission, the Chairman (Sir Edward Hilton Young), however, signing "subject to additional recommendations," which were duly set out. The report was carefully examined by the Government of India in consultation with the Standing Emigration Committee of the Indian Legislature and with prominent representatives of all parties in the Legislative Assembly. The tentative conclusions reached by the Government were communicated to the Secretary of State for India in March 1929 and were made public in India in September.

Meanwhile the Secretary of State for the Colonies had sent out Sir Samuel Wilson, Under-Secretary of State for the Colonies, to East Africa during March to discuss the recommendations of the Hilton Young Commission for the closer union of Kenya, Tanganyika and Uganda, with the Governments concerned, and also with any bodies or individuals representing the various interests and communities affected, with a view to seeing how far it might be possible to find a basis of general agreement. Sir Samuel Wilson was also directed to ascertain on what lines a scheme for closer union would be administratively workable and otherwise acceptable. At the invitation of the Secretary of State for the Colonies the Government of India deputed Mr. Sastri to go to East Africa to help the local Indian communities to state their views to Sir Samuel Wilson on matters arising out of the Hilton Young Commission's Report and to be at his disposal if he required assistance in dealing with the Indian deputations. Mr. Sastri left India in April, and by August, after his return to this country, he had completed a report on his visit which has already been briefly referred to in Chapter I, and which furnished the Government of India with valuable material for consideration while its views and recommendations on the whole subject were being formulated for presentation to His Majesty's Government. Mr. Sastri's chief suggestions were that the Government of India should press inquiries as to the basis of a civilization franchise which should be common to all races alike; invoke the good offices of the Colonial Office and of the Government of Kenya in securing the consent of the European community to the establishment of a common electoral roll; oppose the grant of responsible government to Kenya or of any institutions leading up to it; oppose the establishment of a Central Council on the lines proposed by Sir Samuel Wilson; demand, in case of the establishment of some such body, that the unofficial representatives from each province should include an adequate number of Indians; advocate the continuance of the official majority in the Legislative Council of Kenya; and demand that the representation of natives in the Kenya Legislative Council should be by natives or by Europeans and Indians in equal proportions.

In September 1929 an Indian delegation from East Africa came to place before the Government of India the views of the Indian community on matters arising out of the Hilton Young Commis-

sion's report. Amongst the numerous points to which the delegation drew attention, and which, in their opinion, were liable to have an important effect upon Indian interests, were the question of common franchise in Kenya, the representation of the natives of the country on the Council, the federation of the several territories in East Africa, the reservation of land in Kenya for the settlement of Indians, the residential segregation of Indians in Kenya, the appointment of an Indian Trade Commissioner, the improvement of educational facilities for Indians, the appointment of Indians in the higher public services in East Africa, and the better political representation of Indian interests in Uganda and Tanganyika. The whole question was discussed by the Government of India with the Standing Emigration Committee and the leaders and prominent members of various parties of the Legislature at a meeting held on the 22nd of September, and their views were communicated to the Secretary of State without delay.

On the 5th of October 1929 Sir Samuel Wilson's report on his enquiries in East Africa was published; and another meeting of the Standing Emigration Committee in this country was convened shortly afterwards to consider his proposals. As a result, a further communication was addressed to His Majesty's Government on the subject by the Government of India. In our Report next year we shall hope to be in a position to describe, from the Indian point of view, a further stage in the history of the somewhat complicated series of events that were originally set in motion by the appointment of the Hilton Young Commission.

Shortly after the conclusion of the War, attention began to be drawn to certain unsatisfactory features,—which were described in previous editions of this Report,—in the condition of the Indian settlers in the Fiji Islands; but as a result of negotiations which the Government of India undertook on their behalf, their circumstances have appreciably improved in recent years, their representation on the Fiji Legislative Council having been increased, and a special officer, possessing adequate qualifications, having been appointed to act as Adviser to the Governor on matters affecting Indians in the Colony, and given a seat in the Legislative Council. Unfortunately, however, a disturbing factor was introduced into the situation during the period under review, in consequence of the issue of Letters Patent in February 1929 under which the constitution of the Legislative Council was revised. When the new

Council met on the 4th of November one of the Indian members moved a resolution recommending the establishment of a common electoral roll in substitution for the existing communal one. The resolution was supported by the three Indian representatives but opposed by the other members of the Council, including the elected European and nominated Fijian members. The resolution was consequently lost, and, in protest, all three Indian members resigned their seats, and the vacancies thus created have remained unfilled, no Indian having hitherto offered himself for election.

Readers of our previous volumes will recollect that the condition of Indian labourers in Ceylon has recently been considerably improved, owing to the passage by the Ceylon Legislative Council in 1927 of the Indian Labour Ordinance, which contained provisions concerning the establishment of a minimum wage. Further events of considerable importance to the Indian emigrants in Ceylon occurred during the year under review, as a result of the acceptance by the Ceylon Legislative Council of the scheme of constitutional reforms originally put forward by the Donoughmore Commission, and subsequently modified by the Secretary of State for the Colonies in accordance with the suggestions of H. E. the Governor of Ceylon. Strong objection was raised by Indians both in Ceylon and at home to the arrangements made under the scheme on the subject of the franchise, since it was considered that they would have an adverse effect upon the position of Indian labourers. The Government of India accordingly took the matter up, and was giving it close attention at the close of the period under review.

Apart from the events we have now discussed, no developments of material importance occurred in connection with Indian emigrants during the year, and their position remains approximately as we have described it in previous editions of this Report.

CHAPTER III.

Politics.

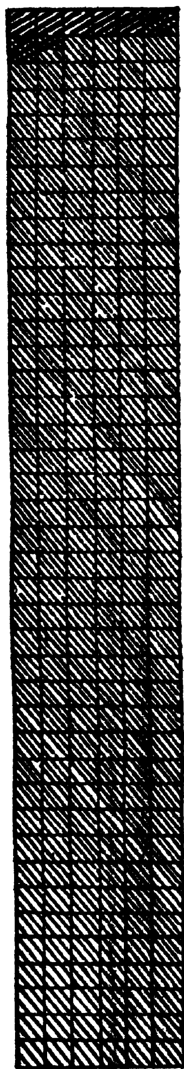
This account of the outstanding features of the politics of British India during the year ending with the month of March 1930, is being written late in the following autumn, and, already, looking back upon that period through the dust of the crowded and dramatic developments that have since intervened, it seems strangely remote; by the time these words are read, a fresh series of happenings of even greater importance will have been interposed, and such contemporary interest as the political Chapters of these volumes have had in the past will be, on this occasion, singularly small. Thus, the rapid march of events having deprived this portion of our Report of much of its more immediate, journalistic significance, and removed it further into the realm of pure history, we shall devote less space to it than usual, and take the opportunity, instead, of expanding some of our other Chapters by incorporating material which has not recently received so much attention.

The political problems of India, although closely inter-connected, may be considered from three separate points of view. The first,—and at present by far the most important,—is the constitutional aspect. This may be said to arise directly out of the topics we have had under discussion in the previous Chapter, (which is, indeed, the reason that we have placed that Chapter first), since it is, in a sense, a matter of external relations,—that is, of India's relations with Great Britain and the British Empire, and of her future status within, or, as one school of Indian politicians would now urge, without the British Commonwealth of Nations. Next come the various aspects of "All-India" politics within British India, which, although in present circumstances they are to a large extent overshadowed by the constitutional question, would of course exist whether that question remained or not; these All-India politics consist, on the one hand, of the doings of the Central Legislature, and, on the other, of the activities of certain somewhat unusual but characteristic political or *quasi*-political bodies, such as the Indian National Congress, the All-India National Liberal Federation, the All-India Hindu Mahasabha, and the All-India Muslim League, which, although by no means wholly corresponding to the ordinary party organizations to which the

The Voters of British India.

7·4 Millions

Enfranchised
(Shaded deep)



239·6 Millions

Unenfranchised
(Shaded light)

N.B.—Each square represents 1,000,000 of population.

peoples of the democratic countries of the West are accustomed, nevertheless transcend local differences and make their influence felt, to greater or less degree, throughout the country as a whole. The third aspect is that of provincial politics. Obviously, throughout an area so vast and populous and diverse as British India, there must constantly arise many detailed problems which affect only comparatively small portions of it, and the political life of the various local administrative units finds its chief expression in the Legislative Councils which were established in the major Provinces ten years ago under the Montagu-Chelmsford Reforms, and in the numerous smaller bodies, such as the existing district and municipal boards, union boards, *panchayats*, and so forth, whose development has been gradually fostered since the Eighties of last century, when it was decided by Lord Ripon's Administration that use should be made of such indigenous machinery of local self-government as was then available. In some ways, the life of the political institutions in the Provinces,—of which the Legislative Councils are of course by far the most important,—has proved, in the opinion of many detached observers, to be more effective, vital, and spontaneous than that of the All-India bodies,—a result which may be ascribed partly to the fact that, from their very nature, the former would in any case be less concerned with abstract problems, partly to the novelty of the ideal of a united India governing herself by means of modern democratic machinery, and partly to the greater measure of real responsibility with which, under the existing constitution, the provincial Legislative Councils, as compared with the Central Legislature, have been endowed. But the manifestations of political activity during a period of twelve months can be so multifarious, even within a single Province, that no attempt has been made in previous issues of this Report to trace in detail the course of provincial, as contrasted with All-India, politics, throughout the whole country; and had we, on the strength of the special circumstances described in the previous paragraph, endeavoured to do so this year, so much additional space would have been required, that the balance of the book would have been radically altered, and it would have been difficult even to mention,—and impossible to discuss in such detail as on this occasion seems desirable,—many of the other interesting and important matters which, in a general review of Indian administrative affairs, are at least as relevant as politics. This being so, we shall confine our-

selves here to examining only the first two sides of the Indian political problem, and must refer such readers as wish to study the third, to the reports published annually by the various provincial Governments, in which the details of local politics are fully described.

If we cast our eyes back, from our present vantage ground, over the period with which we are required to deal, there is little difficulty in distinguishing, amid the complicated web of political activity contained within it, the three strands which, by means of their intricate connections with subsequent events, exercised the most far-reaching influence upon them; all three, it can be seen, had contact with one another at certain points, but whereas the first runs clear and obvious across the whole of the section of time which we have under examination, the others do not fully emerge into view until our search has traversed more than half the field of vision. In last year's Report, ample indication was given of the profound influence which, in one way or another, the existence of the Statutory Commission had then had on the political life of the country, and during the twelve months now under review, as we have seen in Chapter I, this influence persisted. This, then, is the first of the three strands, or factors, with which we are concerned. The Commission's report, it will be recollected, was not published until the summer of 1930, and thus our period was throughout overshadowed by anticipation of a forthcoming event which did not, in fact, take place until several weeks after its conclusion. In this atmosphere of uncertainty, when the air was thick with constitutional doubts and speculations which could not be brought to rest upon solid ground, discussion of the major political issues which have so much occupied the minds of the educated classes during the last decade or two seemed somewhat fruitless and unreal, particularly before the emergence of the second of the three factors to which we have alluded. This was the important announcement made by H. E. the Viceroy in the Gazette Extraordinary of the 31st of October, which has already been referred to in Chapter I, and which is reproduced *verbatim* in Appendix II. The reactions to this announcement will be studied in more detail a few pages hence, and it will be sufficient here to note that, by clearly stating that the logical goal of Indian national aspirations is the attainment of Dominion Status, and by inviting the leaders of political opinion in this country to a Round Table Conference

in London at which the problem of India's future constitution would be fully discussed, it had the effect, at the time, of rallying to the support of the Government large and important sections of opinion which, while in fact opposed to extremist courses, had tended to remain passive, if not actually hostile, in the somewhat chilly and mistrustful political climate that had previously prevailed; amongst them were several of the groups which had been closely identified with the boycott of the Statutory Commission from the time when Sir John Simon and his colleagues first arrived in India. The last of the three factors to which we require to draw attention was the decision reached at the plenary meeting of the Indian National Congress at Lahore during the last few days of December. Readers of our previous volume will recall that at the meeting of the Congress during December 1928, in Calcutta, a resolution was passed to the effect that, if the scheme of constitutional reforms contained in what was known as the Nehru report was not accepted by the British Parliament within twelve months, the Congress would consider itself free to pronounce in favour of complete independence for India and to inaugurate throughout the country a campaign of non-co-operation with the Government. At the meeting at Lahore during the period under review, the scheme propounded in the Nehru report, which had assumed the grant of Dominion Status, was abandoned,—largely, in fact, because it had already been virtually rejected by the Muslims and Sikhs, and by the Hindu Mahasabha, and thus had failed to effect the consolidation of the various communal bodies for which it had been originally designed,—and after considerable divergencies of opinion had been manifested, the resolutions in favour of obtaining India's immediate independence from Great Britain, and of initiating the Civil Disobedience Movement which has had such deplorable consequences after the conclusion of the period under review, were eventually passed.

These three factors having thus dominated the political situation throughout the year, and the first of them, namely the continued existence of the Statutory Commission, having had the effect of inhibiting, rather than stimulating, new developments, the period which we have set out to review divides itself naturally into two parts, the first of which, consisting of the seven months prior to the Viceregal announcement, now seems, when contrasted with the remaining five months, to have been somewhat unim-

portant, since it contains few features which would be recognised by the historical student as having had close connection with the dramatic occurrences which have supervened during the latter part of 1930. Bearing this fundamental attribute of the year in mind, we may now proceed to examine its major political events, as far as we may, in the order in which they occurred.

Our previous issue did not carry its account of the business transacted during the 1929 Session of the Central Legislature beyond the 28th of March, when the two Houses adjourned for the Easter holidays, and consequently contained no record of the proceedings during the concluding fortnight of the Session. When the Assembly met again on the 2nd of April, there remained two measures of considerable importance to be disposed of, namely the Trades Disputes Bill and the Public Safety Bill, both of which had aroused acrimonious discussion in the past. The history of these controversies, however, lies almost entirely within the period covered by our previous volume, and it would, indeed, have been more natural, if less strictly accurate from the chronological point of view, to have described their ultimate fate there rather than here. We shall therefore make no attempt to recapitulate in detail the various stages through which these measures had passed prior to the opening of the period under review, nor the objects for which they were designed, since both were fully treated in last year's Report, and shall dispose of the final events of the Delhi Session as briefly as possible. As regards the Trades Disputes Bill, this had already been debated at some length during the earlier part of the Session, and on the 11th of February had been referred to a Select Committee, which while introducing some modifications in detail, left the main principles of the measure unchanged; in this slightly revised form, therefore, it again came before the House on the 2nd of April, and large portions of the four succeeding days, and of the 8th of April, when it was passed, were devoted to its discussion. In his speech on the opening day of the final debate the Hon'ble Sir Bhupendra Nath Mitra, Member for Industries and Labour, stated that although he personally did not like many of the amendments made by the Select Committee, he was quite prepared to accept them, and formally asked the House to take the Bill into consideration as it stood. A motion was thereupon put forward by Mr. V. V. Jogiah that consideration of the Bill should be postponed pending the report of the Whitley

Commission; but this, after a short discussion, was negatived, and the House then proceeded to debate upon Diwan Chaman Lall's motion that the Bill should be re-circulated for the purpose of eliciting further opinions upon it. Speeches of great length were made both by Diwan Chaman Lall and other members in support of this motion, the principal arguments being that a number of important labour organizations in the country had not been sufficiently consulted on the provisions of the Bill, that it was not designed to further the interests of the industrial workers, and that the bulk of responsible labour opinion was in fact opposed to it. The motion, however, was ultimately lost, and the House accordingly set about the business of debating the provisions of the Bill in detail. The discussions which followed related almost entirely to Clauses 2, 3, 15 and 16, which, for one reason or another, were objected to, but none of the amendments proposed were carried, and on the morning of the 8th of April, the whole Bill, as modified by the Select Committee, was, as we have seen, duly passed. Its passage was rendered memorable by the fact that, at the moment when the House was re-assembling after the division, and while the President (the Hon'ble Mr. V. J. Patel) was announcing his intention of proceeding to other business, there occurred the terrorist outrage which has already been mentioned; two bombs, flung from the Visitors' Gallery, burst among the benches occupied by the official members, and several persons were injured.

We must now re-trace our steps for a moment to consider the events which took place during this Session in connection with the Public Safety Bill, referring such readers as are ignorant of the origin of the Bill, and its previous course in the Assembly, to last year's Report, in which the whole matter was treated at some length. On the 2nd of April, when the Bill was due to come up for discussion again, an important statement was made by the President, the outstanding sentences of which were as follows: "Before I ask the House to resume debate on the motion that the Public Safety Bill, as reported by the Select Committee, be taken into consideration, I should like to make a few observations. Since we met last I have been at pains to examine the speeches made by the Leader of the House from time to time on the Public Safety Bill, on the one hand, and the complaint lodged by the Crown against the 31 persons in the Meerut Court. As a result

of my labours I have found that the fundamental basis of the Public Safety Bill is virtually identical with that of the case against the 31 accused. Honourable members are aware that the rules of business of this House provided that no question shall be asked nor any resolution moved in regard to any matter which is under adjudication by a court of law having jurisdiction in any part of His Majesty's Dominions. The question therefore arises whether it is possible for this House to discuss the motion that the Public Safety Bill be taken into consideration, without referring to any of the matters which are *sub judice* in the Meerut trial. I think there can be no two opinions that real debate on the Bill is not possible. Besides, acceptance of the Bill would mean practically the acceptance of the fundamental basis of the case for it, and rejection of the Bill would mean the rejection of that basis, and in either case such a course is bound to effect prejudicially the case for the prosecution or for the defence in the Meerut trial as the case may be. I do not see how in these circumstances I can legitimately allow the Government to proceed further with this Bill at this stage. I have decided, instead of giving any ruling, to advise the Government themselves in the first instance to consider the observations I have made and postpone the Bill pending the Meerut trial, or, if they attach greater importance to the passing of this Bill at this juncture, to withdraw the Meerut case and then proceed further with the Bill." In view of the importance of the Bill, and the controversies to which it had already given rise, this announcement naturally evoked considerable speculation and excitement, and two days later the Leader of the House and Home Member (the Hon'ble Mr. Crerar[1]), after stating that the matter had been given very careful consideration, defined the attitude of the Government upon it as follows: "The views expressed by the President appear to rest in part on a misunderstanding of the facts and in part on a misconception of the powers conferred upon the President by the rules and Standing Orders of this Chamber. With regard to the first point, the Government, in the discharge of their responsibilities, are entitled to ask this House to entrust them with certain powers. For this purpose they do not require to refer to any detailed allegations which will be for the adjudication of the Court, and they are of opinion that

[1] Now Sir James Crerar.

nothing need be said which would prejudice the matter which is before the Court. Nor can they agree to the proposition that if the House decides to place in the hands of Government powers intended to prevent or check subversive propaganda in this country, this fact will in any way prejudice the decision of the question whether these accused persons have or have not entered into the conspiracy alleged aganist them. The principle of the Bill has already been subjected to the most comprehensive discussion in two Sessions and has recently been affirmed by the House by a substantial majority. The primary matter now before the House is the consideration of the changes of detail made by the Select Committee. The point, however, to which the Government attach the greatest importance is that in their opinion neither the legislative rules nor the Standing Orders confer on the President the powers which you apparently claim. In the case of a Bill the relevant powers of the President in the matter of debate are contained in Standing Order 29. The power vested in him is to be exercised for the control of individual members while speaking, and cannot be employed for the purpose of preventing Government business from being transacted. No rule or Standing Order of this Chamber authorizes the President to decide whether the Government should, or should not, be allowed to proceed with legislation which it desires to submit for the consideration of this House, in a case where all the requirements of the rules and Standing Orders preliminary to the moving of a motion have been fulfilled, as they have been in respect of this Bill. In the circumstances Government regret to find themselves unable to accept either of the alternative suggestions you put before them. They regard the passing of the Bill as a matter of urgent importance to enable them to fulfil their responsibilities for the government of the country, and they could not contemplate the withdrawal of a criminal case the decision of which they regard as essential in the public interest." During the next two days, members were given an opportunity of expressing their views on the point at issue, the principal speakers being Pandit Motilal Nehru, Sir D'Arcy Lindsay, Mr. M. R. Jayakar, the Hon'ble Sir Brojendra Mitter (Law Member), Mr. S. Srinivasa Iyengar, and the Hon'ble Mr. Crerar; and on the morning of the 11th, the House having just reassembled for the first time since the perpetration of the bomb outrage, the President gave, at considerable length, his ruling,

which concluded thus: "I am of opinion that, although power to rule this motion out of order is not expressed in so many words in any of the rules and Standing Orders, it does arise by necessary implication and analogy, and I am further satisfied that, in any case, the Chair has the inherent power to rule out a motion on the ground that it involves an abuse of the forms and procedure of this House as this motion, I hold, does. I therefore rule it out of order." The matter, however, was not allowed to rest at this stage. On the following day H. E. the Viceroy addressed the members of the two Houses, and after discussing the various issues arising out of the bomb outrage, proceeded as follows:—"The second reason for which I have required your attendance this morning was to acquaint Honourable Members with the decisions reached by my Government in view of the situation created by the ruling given yesterday by the President of the Legislative Assembly. The result of that ruling is twofold. In the first place, it propounds an interpretation of the rules, which I am satisfied is not in conformity with their original intention. In the second place, the practical effect of the President's ruling is to debar Government from asking the Legislature to give it the additional powers of which it conceives itself to stand in need, and to make it impossible for either Chamber of the Legislature to record any decision upon Government's proposals. Entertaining, as it does, no doubt as to the intention of the rules in question, my Government is nonetheless constrained to recognize that the only appropriate person to interpret, within either House of the Legislature, the rules under which it works is the President of the House himself. Meanwhile the responsibility for protecting the foundations of the State rests upon the Executive Government of which I am head. The men behind the revolutionary movements, against which the Bill is directed, will not stay their hands, because the enactment by the Indian Legislature of preventive legislation is postponed. With this danger in view, and speaking with a full knowledge of much that can necessarily not now be publicly disclosed, I conceive that it has become imperative for Government to obtain the powers proposed in the Public Safety Bill without further delay. I have accordingly decided to avail myself of the authority conferred upon the Governor General under section 72 of the Government of India Act, in order to issue an Ordnance, giving to the Governor General in Council the powers in question."

The period of 4½ months that elapsed between the end of the Delhi Session and the opening of the new Session in Simla was, from the political point of view, singularly uneventful. Some excitement, it will be remembered, was aroused by the announcement on the 23rd of May that, since the Statutory Enquiry into the working of the reformed constitution was still in progress, H. E. the Viceroy had determined that the dissolution of the Legislature, which normally would have taken place in September or October, would be postponed; and amongst members of the Congress Party there was, for a time, some talk of resignation by way of protest against this decision. But the main centre of interest throughout the summer had shifted to England, where,—apart from the General Election, whose progress and results were watched here with unusually close attention,—events of considerable importance to the future of this country were in any case known to be in progress or impending. Sir John Simon and his colleagues, it will be remembered, had completed their second visit to India by the 14th of April, and after reaching London had settled down to the arduous task of sifting the mass of varied information they had accumulated, and evolving their recommendations therefrom; and the members of the Central Committee of the Indian Legislature[1] were also in London assisting in this work. Moreover on the 29th of June H. E. the Viceroy departed on a four months' visit to England,—H. E. Lord Goschen, the Governor of Madras, taking over his functions during his absence,—and it was widely supposed at the time that Lord Irwin's primary object in leaving India was to discuss with H. M. Government the desirability of adopting some method for dispersing the cloud of mistrust and negation with which the whole political life of the country seemed to have recently been overshadowed; a measure of support was in fact given to this belief by a Speech which Lord Irwin made at a dinner given by the Chelmsford Club in Simla nine days before his departure, to which great importance was attached, and which contained the following words: "The British Elections have just been held, and His Majesty's Government has now been entrusted to other hands. But whatever the differences between British parties, I know that all desire to find a path wide enough for Great Britain and India to walk along together. I know too that behind the noise and din of much

[1] The origin and functions of this body have been indicated in Chapter I.

political controversy in India, there is, even among many whose position compels them to be protagonists in political battles, a great volume of strong and sane opinion that desires nothing so much as to reach in partnership with Great Britain an honourable settlement of India's constitution. When I go to England I shall seek opportunity of discussion with His Majesty's Government on these grave matters. It will be my duty, as I have said elsewhere, to represent to His Majesty's Government the different standpoints of those who can speak for Indian political opinion. This I shall strive to do as faithfully as I may, in the spirit and to the end outlined in what are for me the two governing pronouncements of British hope and purpose:—the familiar Declaration of 1917 and the Instrument of Instructions which every Governor-General receives from the King-Emperor when he assumes office, wherein His Majesty affirms that 'Above all things it is Our will and pleasure that the plans laid by Our Parliament for the progressive realization of responsible government in British India as an integral part of Our Empire may come to fruition, to the end that British India may attain its due place among Our Dominions'. I earnestly pray that, as the future unfolds itself, we may see the sure realization of this hope."

The Simla Session of the Legislative Assembly was held between the 2nd and the 26th of September. A substantial amount of business was transacted during this comparatively short time, but much of it was of purely technical interest and raised no major political issues.[1] From among the events of the period we may select four as being of sufficient general importance to require mention here. During the first day of the Session the President made a statement concerning the events with which the previous Session had terminated; and read to the House a letter he had addressed to H. E. the Viceroy on the subject during May, and the reply he had received thereto. Mr. Patel had protested, in his letter, against what he considered to have been the criticisms passed on his ruling in the Viceroy's final address, but the Private Secretary to the Viceroy, in answering, stated that "His Excellency

[1] The Bills passed during the Session including the Bengal Pilot Service (Centralization of Administration) Bill, the Indian Census Bill, the Indian Soft Coke Cess Bill, the Transfer of Property (Amendment) Bill, the Indian Territorial Force (Amendment) Bill, the Indian Cotton Cess (Amendment) Bill, the Indian Registration (Amendment) Bill, the Guardians and Wards (Amendment) Bill, and the Indian Succession (Amendment) Bill.

desires me to say that it was no part of his intention either to criticise the ruling you had given or pass censure upon you for it. Such an interpretation in the circumstances in which the address was delivered was perhaps inevitable, but His Excellency desired to confine himself to pointing out the practical results that followed from the ruling and to stating the action which in his view was imposed upon himself and upon Government for the proper discharge of their own responsibilities. I am desired by His Excellency to add that he fully shares your anxiety to maintain the dignity of the House and the authority of the Chair". The President expressed his gratification at this reply, and the incident accordingly closed.

The second matter which requires mention, since it had consequences in the next Session which will have to be referred to later, was the announcement made by the President on the following day, to the effect that he had appointed a Committee of the House, under the chairmanship of the Home Member, to enquire into the changes that might be necessary, as a result of the bomb outrage, in the methods of policing the Assembly buildings; he indicated that it might be better if, instead of making use of the ordinary police, the Assembly employed a special staff of its own for the purpose, as is done by the House of Commons.

The next topic is one which has already received attention in Chapter I, namely the debates upon the Bill to Amend the Code of Criminal Procedure, 1898,—popularly known as the Hunger Strike Bill. The need for introducing this measure arose out of the conduct of certain of the accused in the conspiracy case at Lahore, since their action had demonstrated that no legal means existed for enabling a trial to be proceeded with when any of the accused voluntarily rendered himself incapable of attending in person; and the Bill was designed to remedy this defect. In introducing it before the House on the 12th of September, the Home Member admitted that it raised controversial issues which might have deterred the Government from taking action on the matter were they not strongly convinced of its necessity. But a *lacuna* had been discovered in the Code of Criminal Procedure which, if it remained unfilled, could in future be resorted to in order to bring about a complete paralysis in the administration of justice, whereby not only would the law be brought into contempt, but grave hardship might be inflicted on witnesses, and on such

prisoners, in a joint case, as did not adopt hunger-strike and wished the trial to proceed in order to demonstrate their innocence. The Bill, he explained, had practically no retrospective effect and did not enlarge the powers of the Executive in any way, since the working of its provisions would lie entirely at the discretion of the Court. The remainder of this day, and the whole of the 14th, was devoted exclusively to consideration of the measure, and the whole atmosphere of the debate was unusually tense, certain members making it the occasion for launching a general attack on the existing system of Government. The situation as a whole, however, had been altered by the abandonment of hunger-strike by the majority of the accused at Lahore, and in these circumstances the Home Member, on the 16th of September, made a statement to the effect that the Government was willing that the Bill should be circulated for further opinion upon it, but that it must nevertheless reserve the right to take such action in the future as lay within its powers, should urgent necessity arise.

The last item to which we would refer was the passage of Rai Sahib Harbilas Sarda's Child Marriage Restraint Bill. The various stages through which this measure had previously passed have been described in detail in earlier Reports; originally put forward as a private member's Bill, it was subjected to various alterations, and came up for discussion in Delhi again in January 1929. At that time, however, the Age of Consent Committee had recently been appointed, and it was felt desirable to defer consideration of the Bill until the Committee had reported; this it did in August, and the Bill, which had now taken the form of a penal measure affecting not only Hindus, but all communities in India, accordingly came up for discusssion in the Assembly on the 4th of September. Its object was to discourage the solemnization of marriages between boys of under 18 or girls of under 14 years. The debate was opened by a motion for postponement put forward by Mr. M. K. Acharya, who argued that there was not sufficient information available to justify the House in legislating upon such an important problem, and that the report of the Age of Consent Committee had been published too late for adequate examination but was based on insufficient evidence and a distorted *questionnaire*. The motion was supported by Mr. Amar Nath Dutt, Mr. M. S. Sesha Iyengar, Mr. Abdul Haye, and Mr. A. H. Ghusnavi, some of whom urged that the Bill involved an

unwarrantable interference by the State in the personal affairs of the people, and was contrary to the interests of the Hindu or Muslim religions. On the other side it was contended that the custom of child marriage had no religious sanctions behind it, that it clearly was attended by deplorable physical and social consequences, and that no progressive self-respecting nation should now-a-days countenance the existence of such a custom within its borders. The strongest speech on these lines was made by Pandit Motilal Nehru, and other speakers in support of the Bill were Mr. N. C. Kelkar, Dr. L. K. Hyder, Mr. K. C. Roy, Mr. M. R. Jayakar, Mr. M. A. Jinnah, and the Home Member. Ultimately, the motion that the Bill, as reported by the Select Committee, be taken into consideration was adopted without a division, and on the 23rd and 28th of September respectively the measure was passed by the Legislative Assembly and the Council of State.

We have now come to what was, perhaps, the most important happening of the whole year. Lord Irwin had landed in Bombay, after his visit to England, on the 25th of October, and on the 31st there was published in a Gazette Extraordinary the famous announcement which is reproduced in Appendix II. Unfortunately it was into an atmosphere already sadly vitiated that the new element provided by this announcement was introduced, but its effects, at first, were gratifying. On the 1st of November, two important meetings of leading politicians were held, one in Delhi and one in Bombay, and despite the fact that they were assembled at such short notice both of them were attended by representatives of most of the political organizations throughout the country. As a result of the Bombay meeting an almost unanimous manifesto was promptly issued welcoming the announcement. At the Delhi meeting, however, the more extreme of the Congressmen who were present urged that the Viceroy's offer should be rejected, or accepted only on such terms as would have been incapable of fulfilment, and it was not until a day had elapsed that a compromise was reached. The unanimous manifesto which then emerged was a cautiously worded document, which stated that "we hope to be able to tender our co-operation to His Majesty's Government", but that "certain acts should be done[1] and certain points should be cleared to inspire trust and ensure the

[1] An amnesty for "political prisoners" was stated, in another part of the manifesto, to be one of these.

co-operation of the principal political organizations of the country". The statement however was fairly generally believed at the time to indicate that even the more extreme groups would hesitate to reject the invitation to attend the proposed Round Table Conference in London and express their views there on the future government of the country. Moreover numerous other statements cordially welcoming the announcement had been issued by responsible politicians throughout India; leaders of the labour movement, for instance, such as Mr. N. M. Joshi and Diwan Chaman Lall, had declared in its favour and asked for adequate representation at the Conference in London: and some influential politicians in Bombay had condemned the qualifying clauses in the Delhi manifesto as indicating a spirit of bargaining, Mr. M. K. Munshi having remarked that "when such a change is recorded in such authoritative manner, in my opinion it is not proper to receive it in a spirit of cautious incredulity". When Mr. Gandhi subsequently described as "conditions" the clauses referred to, more serious doubts began to be entertained as to how far the co-operation of the Congress could safely be assumed. However by the end of November, a month or so before the opening of what is known here as "political week", when the annual meetings of most of the important "All-India" organizations take place, it was at any rate evident that all the other important political groups in the country, including the Liberals, the Hindu Mahasabha group, the Muslims, the "Justice" or non-Brahmin Party of the Madras and Bombay Presidencies, and the Europeans, were practically unanimous in their acceptance and support of the offer contained in the Viceroy's announcement. Lord Irwin, at the time, was absent from Delhi, having left in the middle of November for a tour in Southern India, but during the course of his journey he was informed that four of the political leaders who had signed the Delhi manifesto were anxious to discuss certain points arising out of it with him as soon as possible. A meeting was accordingly arranged for the 23rd of December, and on that date His Excellency received Mr. Gandhi and Pandit Motilal Nehru, and also Sir Tej Bahadur Sapru, the Liberal leader, Mr. Jinnah, the leader of one wing of the Muslim party, and Mr. Patel, the President of the Legislative Assembly. But from the outset the two Congress leaders took their stand upon a re-interpretation, on more drastic lines, of a clause in the Delhi manifesto

relating to the grant of Dominion Status, although to anyone who was aware of the constitutional and historical relations between the Viceroy, His Majesty's Government, and Parliament, or of the political situation in Great Britain at that particular moment, it was quite evident that no radical alteration could be effected in the offer which His Excellency had so recently made. Nevertheless, Mr. Gandhi and Pandit Motilal Nehru, neither of whom could be accused of ignorance of constitutional or political facts, insisted that if the participation of the Congress in the proposed Conference in London were to be secured, its functions must be specifically restricted to working out a form of Government for India equivalent to full and immediate Dominion Status. At the end of two and a half hours of discussion the various other matters arising out of the Delhi manifesto, such as the possibility of an amnesty for "political" prisoners, had not even been touched upon, and the interview was terminated.

The scene now shifts to Lahore, whither Mr. Gandhi and Pandit Motilal Nehru repaired, after the conclusion of their discussions with the Viceroy, for what proved to be one of the stormiest annual meetings of the Congress ever held, and also, perhaps, the most important. It is however scarcely necessary to discuss the proceedings of the Subjects and Working Committees, or of the plenary Session, in any great detail, because the main question at issue, namely whether the attainment of Independence or Dominion Status should be the declared object of Congress policy, had in effect been practically settled by the failure of the conversations on the 23rd of December; for although opposition from members of their own party was inevitable, whatever attitude the two Congress leaders might take up, it seemed unlikely that they would have acted as they did, had they not had good reason to believe that the general consensus of opinion at Lahore would prove to be in favour of adopting the course which rejection of the Viceroy's offer logically implied, and that it would have been impossible for them to have accepted it without causing the secession of the extremists. The proceedings as a whole lasted a week, the Working Committee having first assembled on the 26th of December and the plenary Session having concluded on the 1st of January. From the outset it was evident that a substantial section of the right wing of the Congress was seriously alarmed by the outcome of the interview with the Viceroy, and

throughout the preliminary committee meetings, in which the important decisions are really reached, the more cautious representatives, such as Dr. Ansari, Mr. Kelkar, Pandit Madan Mohan Malaviya and Mrs. Naidu, strongly emphasized the imprudence of complete refusal to participate in the London Conference. The left wing, on the other hand, was equally clamorous for a more bold and drastic policy, urging that a mere resolution in favour of independence would be quite inadequate unless it was promptly followed up by the inauguration of civil disobedience on an extended scale throughout the whole country. Pronounced differences of opinion were also manifested over a variety of other matters. For example, Mr. Gandhi's resolution condemning the attempt to derail the Viceregal train on the 23rd of December was vehemently opposed by the younger and more irresponsible delegates, and it was only with the utmost difficulty, and by a narrow majority, that he ultimately secured its passage by the full Congress in a modified form; and his attempts to obtain assent to another resolution, whereby he proposed to alter the machinery of the annual Congress meetings, by reducing the number of delegates and rendering the whole organization less cumbrous, failed altogether. The long-standing dispute between Mr. Subhash Chandra Bose and Mr. J. M. Sen Gupta with regard to the leadership of the Congress organization in Bengal also came to a head during the week and provoked a violent controversy, and there were sharp divergencies of view over the proposal that Congressmen should resign their seats in the Legislatures; moreover the talk of the repudiation of debts by a *Swaraj* Government naturally aroused some doubts. But all these, except the question of boycotting the Legislatures, were comparatively minor issues, and on the 31st of January, in full Congress, the main resolution, concerning which there had been such protracted discussions in committee, was formally passed without dissent. It ran as follows: "This Congress endorses the action of the Working Committee in connection with the manifesto signed by party leaders, including Congressmen, on the Viceregal pronouncement of the 31st of October relating to Dominion Status, and appreciates the efforts of the Viceroy towards a settlement of the national movement for *Swaraj*. The Congress, however, having considered all that has since happened, and the result of the meeting between Mahatma Gandhi, Pandit Motilal Nehru and other leaders and the Viceroy,

is of opinion that nothing is to be gained in the existing circumstances by the Congress being represented at the proposed Round Table Conference. This Congress therefore in pursuance of the resolution passed at its session at Calcutta last year, declares that the word '*Swaraj*' in article one of the Congress constitution shall mean complete independence, and further declares the entire scheme of the Nehru Committee Report to have lapsed, and hopes that all Congressmen will henceforth devote their exclusive attention to the attainment of complete independence for India, as a preliminary step towards organizing a campaign for Independence; and in order to make the Congress policy as consistent as possible with the change of creed, this Congress resolves upon a complete boycott of the central and provincial legislatures and committees constituted by Government and calls upon Congressmen and others taking part in the national movement to abstain from participating directly or indirectly in future elections and directs the present Congress members of the legislatures and committees to resign their seats. This Congress appeals to the nation zealously to prosecute the constructive programme of the Congress, and authorizes the All-India Congress Committee, whenever it deems fit, to launch upon a programme of civil disobedience including non-payment of taxes, whether in selected areas or otherwise, and under such safeguards as it may consider necessary".

The plunge had now indeed been taken; but it was not clear, at first, how far the appearance of unity which had been maintained during the final stages of the deliberations at Lahore represented reality. For on the one hand there were evident signs that the more moderate adherents of the Congress were still doubtful whether the opportunity of attending the Conference in London ought to have been rejected, and whether. in view of the unfortunate position in which the Congress had been placed by its attempts to boycott the Legislatures in the past, a return to that policy was wise. On the other hand, the attitude of the extremists was rendered uncertain by the fact that, almost immediately after the conclusion of the plenary session at Lahore, Mr. Srinivasa Iyengar and Mr. Subhash Chandra Bose had announced the formation of a new organization known as the Congress Democratic Party, which was supposed at the time to indicate that the attempt to placate the left wing had not really succeeded, and that a split was, after all, imminent. Thus, during the first few weeks of the new year,

there seemed some grounds for hope that India might still be spared the disorders which threatened her.

When compared with the proceedings at Lahore, the other events of the 1929 "political week" were not spectacular. Readers of our previous issues will recollect that in 1927, the All-India Muslim League, whose annual Session used to be one of the features of this period, split into two rival sections; and although, twelve months later, a special gathering of Indian Muhammadans, known as the All-Muslim Parties Conference, assembled in Delhi and passed a series of very important resolutions, it left no permanent organization behind it, and by the winter of 1929, the two wings of the original Muslim League had not re-combined. In consequence, no really representative Muslim gathering took place during the period with which we are concerned, and the only important counter-attraction to the Congress Session was the annual meeting of the All-India Liberal Federation, which took place in Madras, under the chairmanship of Sir Phiroz Sethna. If the significance of these proceedings is to be fully appreciated there are two facts which require emphasis,—one being that the Liberal Party in this country, although a much smaller and more loosely-knit organization than the Congress, nevertheless numbers amongst its adherents a large proportion of distinguished public men, and the other, that despite its opposition to the Congress over ways and means, it had hitherto differed from it very little as regards ends. Indian Liberals are, in fact, as strongly nationalist in their views as any other body of men in this country, and it would thus be a mistake to interpret the outcome of their deliberations during the period under review as representing any fundamental difference from the Congress over ultimate ideals. Nevertheless, the decision of the latter to reject the Viceroy's offer and declare for complete independence destroyed the alliance which had been established between the two parties over the boycott of the Statutory Commission; for the Liberals were strongly of opinion that India could become great and coherent and self-governing more naturally and rapidly within the framework of the British Commonwealth of Nations than outside it, and that the proposed Conference in London offered an opportunity for advancing her along this road which it would be folly to refuse. The chief speakers at the meeting of the Federation were Sir Phiroz Sethna, Sir C. P. Ramaswamy Iyer, and Mr. Srinavasa

Sastri, and at its conclusion an important appeal was issued to all those who dissented from the policy adopted at Lahore, of which the following is an extract: "The march of events during the last two months and particularly during the last few days, makes it imperative that the Liberal Federation should make an appeal to those in the country who have hitherto pinned their faith to the achievement by India of Dominion Status as an integral member of the British Commonwealth of Nations. The announcement made by His Excellency the Viceroy on the 31st October last with the full consent and authority of His Majesty's Government evoked a remarkable feeling of response in the country and from the Indian princes, which led us to believe that the solution of the difficulties with which we have been confronted was at last within sight. The debates that followed in the House of Lords and in the House of Commons unfortunately gave rise to a great deal of misunderstanding with regard to the meaning and effect of the purpose and scope of British policy adumbrated by His Excellency the Viceroy. Nevertheless those of us who realize the political conditions surrounding the Labour Government in England were disposed and are still disposed to attach far greater significance and weight to the authoritative statements made by His Majesty's Government through the Secretary of State in England and the Viceroy in India, than to their critics in Parliament or in the English Press. As we read the situation the essential condition of success at the Round Table Conference is that there should be the maximum amount of agreement among ourselves in India. If we can secure such agreement, our representatives at the Round Table Conference will be able to press with every hope of success for complete Dominion Status being established, subject to such safeguards and reservations including the protection of the interests and rights of minorities as might be necessary in the present conditions of India for the period of transition. We have always been anxious that in order to produce a favourable atmosphere the Government in India should implement the new policy by action calculated to remove all causes of irritation and produce calm and goodwill. . . We firmly believe that the only rallying cry which can unite Hindus, Muhammadans, Christians, Sikhs, Parsis, the Europeans, the propertied classes, and the labouring and depressed classes, can be Dominion Status for India, not as a distant goal or ideal but as an object capable of achievement within the shortest

possible limit of time. In a constitution seeking to give India the status of a Dominion, there will be no difficulty in making ample provision for the safeguarding of her security against internal trouble and foreign aggression during the period of transition. The mutual relations of British India and Indian States can also be satisfactorily defined and provision made for their future regulation consistently, on the one hand, with the Dominion Status now contemplated, and on the other, with the autonomy of the Indian States. Those of us who believe in the peaceful evolution of India cannot but deplore that any section of the people of this country should raise the cry of independence and involve our future in turmoil and confusion. Believing as we do that the Labour Government and Lord Irwin are in real earnest in seeking an acceptable solution of the constitutional problem we should be guilty of utter short-sightedness and lack of statesmanship if we fail to seize the opportunity that has been extended to us. We realize that the task of those who believe in Dominion Status and who are prepared to work for it has become more difficult by reason of the attitude adopted by one leading political organization in India and that their responsibility has become all the greater, but if all the other parties who believe in Dominion Status will join hands together in pressing India's claim, there is no reason why we should not achieve it. But this makes it necessary that the internal differences which divide one community from another should be composed in a just and generous manner. Believing as we do in principles of justice and equality and fairness to all parties and communities and interests, we make an earnest appeal to all those whose objective is Dominion Status to devise a means of common deliberation. If such an attempt is made and we proceed about our business in a spirit of give and take, we are confident of a settlement amongst ourselves which will expedite and facilitate the work of the Round Table Conference in London. It is in that hope and belief that we issue this appeal. As a necessary preliminary we shall appoint a small committee of our own party, with power to co-operate with representatives of other parties for the purpose of taking the necessary initiative".

We may now pass on to discuss some of the outstanding occurrences of the Delhi Session of the Central Legislature. By the time the Assembly met, on the 20th of January, it was known that the majority of Congressmen had definitely decided to obey the resolu-

tion regarding the boycott of the Legislatures which had been passed at Lahore, and in consequence there seemed reason to suppose that the Session would prove more tranquil and productive than its predecessors, and provide those parties which had faith in constitutional methods with a good opportunity for getting to grips with the exceptionally important issues of the moment. The early part of the Session was however disturbed by a controversy arising out of the appointment by the President, during the Simla Session, of a Committee,—to which reference has already been made,—to advise upon the arrangements for watch and ward of the Assembly buildings. The settlement eventually reached was communicated in the following letter from the Viceroy to the President: "After the discussions I have recently had with yourself, the Leader of the Opposition and Leaders of other parties in the Assembly, I am in a position, on behalf of the Government, to communicate to you their proposals for the solution of the difficulty that has arisen, in the hope that these may prove the basis of a working agreement or convention on the matters lately in dispute. I cannot doubt that you and all non-official Members of the Assembly have only the same purpose in this matter as the Local Government and the Government of India, *viz.*, to be satisfied that adequate protection is secured for the President and Members of the Assembly while in discharge of their duty; and if agreement can be reached upon the practical means to secure this purpose, and the means adopted prove adequate for its attainment, discussion of general principles, upon which agreement might be more difficult, need not arise. I deal first with the question of the securing of protection in what are known as the inner precincts. In regard to this, Government would propose to depute to the service of the Assembly a senior police officer, who would be responsible to the President for regulating all matters relating to the protection of the Assembly within the inner precincts. For the purpose of his Assembly duty, this officer might be designated, "the Watch and Ward Officer of the Assembly." In any case in which the special experience of the deputed officer might lead him to think that the precautions approved by the President were inadequate, it should be open to him to consult his superior officer in the Police Department, and if such officer shares his opinion, he should so report to the President, who would forward the report with his observations to the Governor-General in Council in order

that an opportunity should be afforded to the authorities concerned to confer with, and in the spirit of this convention to advise the President upon the matter. In an immediate emergency, where such consultation was not possible or when the officer was unable to take the instructions of the President, the officer would be at liberty to take such action, in virtue of his powers as a police officer, as his knowledge of the emergency appeared to him to render necessary and in such cases it would be assumed that he does so with the consent of the President. Government further recognize the general desire among the Members of the Assembly that the requisite protection should be secured through an Assembly establishment, and will be ready to co-operate in the early establishment of a staff of suitable quality for this purpose. This staff would be part of the Assembly establishment, subject to the control of the President, exercised through the deputed officer, and could wear such uniform as the President, on behalf of the Assembly, might direct. Until the special staff referred to above can be brought into existence, Government will place at the service of the Assembly and under the orders of the deputed officer, such police as may be required. Such police might, if so desired, be distinguished by the wearing of a special armlet at the discretion of the President. Should this arrangement be acceptable to the Assembly, Government will arrange to depute a suitable officer, as suggested above, to be at your disposal forthwith for the purpose named, and I understand that you will then without delay take steps, in consultation with the Secretary to the Legislative Assembly and the deputed officer, to recruit the requisite permanent staff. If, as I trust, these proposals commend themselves to you and the Assembly, I am unable to say, on behalf of my Government, that they would view the arrangement embodied in this as an adequate substitute for the system which has hitherto been in force. As regards the outer precincts of the Assembly, the matter may be examined further, and, in the meanwhile, the Government of India will instruct the Local Government that all orders issued to the police within the outer precincts of the Assembly sector shall be framed with the approval of the President, acting on the advice of the Local Government. I greatly hope that, with goodwill on both sides, the arrangement that, on behalf of the Government of India, I have here outlined may furnish the means of resolving the unfortunate deadlock which has caused inconvenience

to Members of the House, and has been a matter, as I believe, of equal concern to the Government and the Chair."

The next event of the Session to which we require to devote some space was the address delivered by H. E. the Viceroy to the members of the Legislative Assembly on the 25th of January, from which we may extract the following salient passages: "On my return to this country from England, it was my duty to make a statement on behalf of His Majesty's Government. That statement stands as I made it, and indeed in the light of the appreciation which I had formed of the principal elements of the problem with which we all have to deal, and with a full knowledge of the weight that must necessarily attach to the considered opinion of anyone holding my present office, I should have felt that I had failed in my duty both to India and Great Britain, if I had tendered any different advice to His Majesty's Government, and when His Majesty's Government saw fit, as they did, to enjoin me to make an announcement on their behalf, I could have chosen no different language in which to make it. The intention of my statement, of which I believe the purport to have been unmistakable, and which carried the full authority of His Majesty's Government, was to focus attention on three salient points. Firstly, while saying that obviously no British Government could prejudge the policy which it would recommend to Parliament after the report of the Statutory Commission had been considered, it re-stated in unequivocal terms the goal to which British policy in regard to India was directed. Secondly, it emphasized Sir John Simon's assertion that the facts of the situation compel us to make a constructive attempt to face the problem of the Indian States, with due regard to the Treaties which regulate their relations with the British Crown, and, lastly, it intimated the intention of His Majesty's Government to convene a Conference on these matters before they themselves prejudged them by formulation of even draft conclusions. The Conference which His Majesty's Government will convene is not indeed the Conference that those have demanded, who claimed that its duty should be to proceed by way of majority vote to the fashioning of an Indian Constitution which should thereafter be accepted unchanged by Parliament. It is evident that any such procedure would be impracticable and impossible of reconciliation with the constitutional responsibility that must rest both on His Majesty's Government and upon Parliament. But though the Conference

cannot assume the duty that appertains to His Majesty's Government, it will be convened for the purpose hardly less important of elucidating and harmonising opinion, and so affording guidance to His Majesty's Government, on whom the responsibility must subsequently devolve of drafting proposals for the consideration of Parliament. It is thus evident that the intrinsic soundness of any particular proposals made, and the manner in which the argument for them is presented will be more important factors in the Conference than the exact numerical representation enjoyed by any of the different sections of opinion that will participate in the proceedings. I had greatly hoped that leaders of Indian opinion would have been unanimous in accepting the hand of friendship proferred by His Majesty's Government, and so taken advantage of an opportunity unprecedented in India's history. All history is the tale of opportunities seized or lost, and it is one of its chief functions to teach us with what fatal frequency men have allowed opportunities to pass them by, because it may be that the opportunity presented itself in a form different from that which they had expected or desired. And history, it seems, is in danger of repeating itself to-day in certain quarters of India. There are some who have accustomed themselves to believe that the only thing necessary to place India in the position they long to see her fill is some simple action by Great Britain, and who are therefore tempted to regard Great Britain as the only obstacle to the full and immediate realisation of their hopes. Yet, without undervaluing the part Great Britain has to play in these matters, I believe that at this moment the future well-being of India, as also the rate of her political progress, depends far more profoundly upon what her public men can achieve for her in the welding into true unity the different elements that compose her being and represent the sum of her political thought, than upon anything that His Majesty's Government or anybody else outside India may be able to do. I am not careful to analyse the purpose of those who, at a critical stage in India's history, would counsel her to reject the way of reason which may persuade and convince, in favour of destructive methods the danger and futility of which she has already experienced in operation. I have striven hard, not I think without result, to secure recognition of what I felt to be the just claims of India at the hands of Great Britain, and at the same time to pursue a policy of day-to-day administration in India that might not need-

lessly imperil any chance there might be of guiding the ship carrying a precious freight of India's future into smoother waters. It has not therefore been the policy of my Government that prosecutions for seditious speech should be extended beyond those cases where the language used, or the circumstances of its employment, constituted an incitement to violence, or made it necessary to regard the speech as incidental to a movement directed to the subversion of law and of the authority of Government. It remains my firm desire, as it is that of His Majesty's Government, following the recently professed wish of the British House of Commons, to do everything that is possible for conciliation in order that Great Britain and India may collaborate together in finding the solution of our present difficulties. But it is no less incumbent upon me to make it plain that I shall discharge to the full the responsibility resting upon myself and upon my Government for the effective maintenance of the law's authority and for the preservation of peace and order. And in the fulfilment of this duty I do not doubt that I should have the full support of all sober citizens. In any case, the Conference will be formed. The fact that some decline to take any part in deliberations so closely affecting their country's future only throws greater responsibility upon, and I would add, gives wider opportunity to, those who are prepared to face and solve difficulties in a constructive spirit. It is certainly no reason why His Majesty's Government should be deflected from their declared intention to call representatives of India to their counsels."

But we must not devote our space to discussing only those events which had a bearing on the constitutional problem; the ordinary business of the Session also requires some attention. As will be seen from the footnote below* a large number of Bills, dealing with a variety of subjects, were passed, and many more were under consideration. The greater part of the Session was,

* Among the Bills passed by the Legislative Assembly, exclusive of the Indian Finance Bill and the Cotton Textile Industry (Protection) Bill, which will be referred to later, were the following:—The Indian Steam Vessels (Amendment) Bill, the Indian Patents and Designs (Amendment) Bill, the Indian Sale of Goods Bill, the Contract (Amendment) Bill, the Transfer of Property (Amendment) Bill, the Provident Funds (Amendment) Bill, the Indian Income-Tax (Amendment) Bill, the Insolvency Law (Amendment) Bill, the Indian Railways (Amendment) Bill, the Indian Tariff (Amendment) Bill, the Steel Industry Protection Bill, the Prisons (Amendment) Bill, the Repealing and Amending Bill, the Silver (Excise Duty) Bill, the Indian Companies (Amendment) Bill.

however, as usual, devoted to the passage of the Railway and General Budgets. The former was presented on the 17th of February and the latter on the 28th, and as substantial extracts from the speeches made respectively by the Hon'ble Sir George Rainy, Commerce Member, and the Hon'ble Sir George Schuster, Finance Member, on those two occasions, are reproduced in Chapter VII, we may confine ourselves here to describing the more important points which arose out of the subsequent debates. The general discussion on the Railway Budget took place on the 19th of February, and the demands for grants were debated in detail on the 21st, 22nd, 24th, and 25th, and were all ultimately passed. A great many of the points raised were naturally of no more than technical importance, and amongst those which involved larger issues, the majority were not new, and have been familiar to the House, and to readers of previous issues of this Report, for some years. Nevertheless, it may not be without interest to recapitulate here a few of the outstanding topics dealt with during the general discussion on the 19th. The debate was opened by Mr. A. H. Ghuznavi, who urged that the separation between the Railway and General Budgets was not sufficiently complete, and that railway development was still, in consequence, liable to irrelevant and unnecessary checks. Sir Purshotamdas Thakurdas, who followed him, suggested that Sir George Rainy's estimate of future receipts was over-sanguine, and accused the railway administration of extravagance, particularly in connection with the construction of new stations; he also contended that the process of Indianizing the railway staff and services was too slow. Among the points in the speech of Mr. N. C. Kelkar, which came next, was that the debiting of the loss on the strategic lines to the railway finances was unjustifiable, and that it might be borne by the Army Department. A later speaker, Mr. Amar Nath Dutt, drew attention to various disadvantages from which 3rd class passengers suffered, such as the lack of facilities for obtaining return tickets, and said that the reservation of certain compartments for Europeans and Anglo-Indians increased the over-crowding among Indians. Dr. Ziauddin Ahmad raised several points, the most striking of which was a general argument in favour of State as contrasted with Company management for all railways in India; he also stressed the desirability of purchasing less railway material abroad. Amongst the other speakers were Sir Hugh Cocke, Pandit Hirday

Nath Kunzru, Lt. Col. H. A. J. Gidney, Mr. H. P. Mody, and Mr. B. Das.

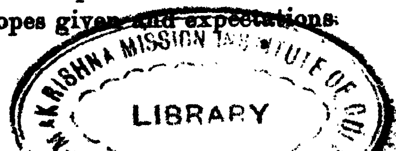
But while the debates on the Railway Budget were, necessarily, of somewhat limited scope, those on the General Budget,—and on the two important measures connected with it, namely the Indian Finance Bill and the Cotton Textile Industry (Protection) Bill,—covered, as usual, an extraordinarily wide field; for the passage of the General Budget provides members of the Legislature with an excellent opportunity for criticizing, from every conceivable point of view, the structure and conduct of the administration,—of which it is but natural, particularly under the existing system of government, that the fullest possible use should be made. And as, on this occasion, the general discussion of the Budget, and the detailed debates on the demands for grants, and on the Finance Bill and the Cotton Industry Protection Bill, occupied the major part of no less than twenty working days of this Session, it will readily be understood that we cannot do full justice to them in a work of these dimensions. The best way to give some indication of the main topics around which controversy raged seems to be to set out extracts from a few of the outstanding addresses delivered by critics of the Government during the general discussions of the Budget on the 4th and 5th of March, and let them speak for themselves. The debate was opened by Mian Mohammad Shah Nawaz, and as he touched upon most of the major points in dispute, we will reproduce the larger part of his speech *verbatim*, supplementing it, at a later stage, by a few selected portions of other speeches. It ran as follows: "Sir, the Budget of the ensuing year, which was presented in a very clear and frank manner, exhibits some very disappointing features. The net position is that the Government are faced with a deficit of 5 crores and 52 lakhs, which is sought to be wiped out by retrenchment in civil and military expenditure to the extent of one crore and 42 lakhs and by the imposition of fresh taxation to the extent of 4 crores and 10 lakhs. We are told that the present year has been a bad one, and the accounts of 1929-30 would have shown a deficit of one crore and 56 lakhs, but for a special windfall. The ensuing year is certainly most discouraging, and the imposition of fresh taxation has caused considerable anxiety. At a time, Sir, when there is a general trade depression throughout the world, when the purchasing capacity of the Indian people has seriously dimi-

nished, when the monsoons have failed in certain parts of the country, and at a time when floods and locusts have done great damage to the crops, economy and not additional taxation should have been the watch-word. The outstanding feature of the Budget of 1930-31 is the imposition of fresh taxation on the poverty stricken people of India. The general increase in the cotton duties from 11 per cent. to 15 per cent. would certainly be welcomed at least in the interest of the Bombay industries and possibly in the interest of the hand-loom industry. But I venture to submit that a further 5 per cent. protective duty on non-British goods should be opposed. The Honourable the Finance Member has been careful to inform us that neither the Government of India, nor the Assembly, is committed to Imperial Preference as a principle, but the fact remains that liberty has been taken to introduce Imperial Preference, and on this account, the Indians have no other alternative but to oppose this item unless and until India can get the reciprocal advantages and facilities from England and other Dominions. The increased excise duty on kerosene oil, which it is hoped will bring 35 lakhs, and the import duty on sugar, which it is hoped will yield one crore and 80 lakhs, would certainly hit the poor and the middle classes. The increase in the rate of income-tax and the super-tax should be opposed by everybody. Lastly, Sir, there is the re-introduction of the import duty of four annas per ounce on silver, which in my humble opinion will hit the poor very much. Well, Sir, we are told that the present deficit is due to the general trade depression, is due to the unrest in this country and elsewhere, and that the Honourable the Finance Member is compelled to resort to additional taxation. But the question remains whether the Indian people are capable of paying the fresh revenues. In my humble judgment, the Indians have no such capacity to pay. Now, Sir, the hard facts of the situation are these: A great section of the people utterly dislikes the present system of Government. They think that the present system is an evil, and they threaten to launch a campaign of civil disobedience, a campaign of non-payment of taxes. On the other hand the Honourable the Finance Member says that the Government mean to impose additional taxation. Hence there are two fires,—the fire of non-payment of taxes, and the fire of imposition of fresh taxation. Between these two fires, the position of those who occupy a central position has become

very difficult indeed. Between these two fires, I venture to submit, the best interests of India will suffer. I agree with the Honourable the Finance Member when he says that the Indian leaders must oppose all threats of unconstitutional action and disclaim the repudiation of debts, and they should help Government in the maintenance of law and order. But, Sir, I do not agree with him at all when he says that the future lies in the hands of the leaders of non-official opinion, and they alone are responsible and not the Government. I say emphatically that Government are also responsible for the present unhappy state of things in this country. If the British nation, through her Parliament, is not prepared to grant immediate provincial autonomy, and at least fix a minimum time limit for the attainment of complete Dominion Status, there can be no peace in this country. My own conviction is that the Honourable the Finance Member should have waited for the result of the Simon Report and the result of the Round Table Conference; and if the result had been favourable, he could have come to this House and said, 'Now the responsibility is very much yours, and you had better place your financial position on an unshakable foundation.' I venture to submit that at the present juncture, our esteemed and able friend was not well advised to bring forward a scheme of additional taxation. Sir, I have to say something about the military policy and the military expenditure. It is a great shame that Indians, except an inadequate and limited number, are not permitted to get admission into the King's Commission. I really do not know why Government are not accelerating the pace of Indianization of the Army. There may be a risk from the British point of view, but the risk must be taken in the interest of this country. Do they mean to say that they do not trust the Indians? So far as I am concerned, and I am perfectly certain that many Indians are of this opinion, if there is any upheaval in Afghanistan or Turkestan or Russia, with a view to attack India, my country, all Indians will be united in defending their own country and the Empire. I do not know why the Britishers are distrusting the Indians,—I cannot understand that. Are they distrusting the Indians because they think that there is going to be an upheaval in this country? I think not. I think that India's heart is quite sound and that of Great Britain may be sound. In my humble opinion the recommendations of the Sandhurst Committee should have been accepted by the Government without any

reservation whatever. If those recommendations are not accepted, the talk about the grant of Dominion Status is all humbug. I concede that the Britishers have brought peace to this country. I concede that the Civil Service is a very efficient service. I grant that you have brought prosperity, by Posts, Telegraphs, Railways, and large irrigation schemes. But at the same time, it cannot be denied that it is not a Government of the people. It has many defects, which I have already pointed out, and those defects must be remedied and the remedy lies in the hands of the Britishers. In the matter of the Indianization of the Army, delay has given rise to bitter unbelief." Among the remarks made by Mr. Shanmukham Chetty, at a later stage of the debate, were the following: "Sir, my attention is naturally drawn to the duty on cotton piece-goods in the first instance. In so far as the Government of India have responded to the repeated call of the cotton textile industry for a measure of protection, the proposals are certainly welcome. But unfortunately the situation has been complicated by the introduction of Imperial Preference. So far as I know, except the voluntary preference that the United Kingdom has given to certain Empire products, no country in the British Commonwealth has yet declared in favour of Imperial Preference as a policy. Some years back, while I was in Australia, on the Empire Parliamentary Delegation, I attended a Conference of Empire statesmen where the subject of Imperial Preference was discussed. Speaker after speaker from the Australian Parliaments said that, in their Tariff policy, they would be guided solely by the consideration of the interests of Australia first and foremost. And may we not be permitted to say that, in the framing of our tariff proposals, we shall be solely guided by the fiscal and economic interests of India and India alone? If it is possible to devise a scheme of tariff by which Indian industries will be able to get all the protection they want, by which the Indian consumer will not be affected, and by which you will give some sort of preference to Empire products, then certainly I, for one, will not object to it. But, Sir, so far as I have studied this aspect of the problem, I think it is very difficult to devise a scheme of tariff which will satisfy these three conditions that I have mentioned." Mr. Chetty was followed by Sir Purshotamdas Thakurdas, and amongst his criticisms was this: "Sir, I think it is a tragedy of fate that the year for which promises were held out to us by the previous Fin-

ance Member that this House would be able to gloat over surplus balances, and dole out all sorts of contributions to nation-building departments, and make remissions of taxation, should be the year when the Honourable the Finance Member is forced to put before us a Budget proposing additional taxation going up to not Rs. 5 crores, as the Honourable the Finance Member estimates, but nearer to Rs. 7 crores. These were the hopes held out to this House when a certain currency policy had to be forced in the teeth of our opposition in 1927, and it is a tragedy of fate for us, but as far as the Government is concerned, one can hardly sympathize with them. All that one can say is that while the suffering is the country's, as far as the Government are concerned, they well deserve the anxiety which must be theirs too. Sir, as far as retrenchment in civil administration is concerned, the Finance Member has come to the conclusion that there is not much room for that. He however has frankly told us in paragraph 19 that: 'A time-scale basis has been adopted in practically all departments, and this is an inevitable commitment. and, unfortunately, we have not yet approached anything like the peak figure.' The increase under this for the year 1930-31 is Rs. 25 lakhs. Obviously, once such liberal increases are made on a time-scale basis, Government must find it difficult to go back upon same. Naturally they cannot now expect any sympathy from this side of the House. When these increases, the details of which I need not go into now, were made, they were made on an extravagant scale, without considering the capacity of the country to stand fresh taxation, and one can only insist that Government must reverse their extravagant policy even now. What is, Sir, the worst feature of the Budget? The proposed taxation holds out no promise to us of the money being spent in any direction which can be said to be of a nation-building utility. One cannot help asking the question, have the Government of India ever had any consistent economic policy to follow which would build up the masses and the people of this country? The question by itself carries its own condemnation; but one cannot help asking, when the Honourable Member asks us to console ourselves, at the time of voting new taxation, that we should look forward to help a constructive economic policy. If the Honourable Member knew all the various promises made by the Government in the past whenever fresh taxation was asked for, and how great hopes given and expectations



raised were set at naught as soon as there was any deficit to fill up in the Government reserve, owing to something else happening, he perhaps would not have asked us to rely upon this so much. Is he prepared definitely to earmark any surplus that may be had out of this new taxation for this constructive economic policy? I know he would say no Government can do it. If that be so, I am afraid that I cannot help having to heavily discount this particular attraction which he holds out."

In these extracts we can discern at least the three main lines of criticism of the budgetary proposals that emerged from the mass of detailed comment made. One was the point raised by Sir Purshotamdas Thakurdas, that the financial policy of the Government had been so short-sighted and extravagant as to leave no margin which could be devoted to constructive "nation-building" objects, and the others were the attacks made upon the proposals to establish a differential rate of duty on textile goods, and upon the general administration of military affairs. Between the 7th and 12th of March the detailed list of budget demands was under debate, and there was keen discussion on several items. Proposals for three small cuts were carried, the most interesting being that in respect of the Finance Department Demand, which was put forward by Sir Hugh Cocke, on the ground that insufficient attention had been paid to the need for retrenchment. In addition, on the 8th, a major cut was made in the Army Department Demand, Maulvi Abdul Matin Chaudhury having moved its reduction to Re. 1. The debates on this occasion were important, and aroused strong feelings, but there is no need to summarize them here, since the extracts of Mian Mohammad Shah Nawaz' speech on the 7th of March which we have already reproduced, together with our general description of the nationalist attitude on military policy in Chapter II, give a sufficient indication of the arguments put forward by the Government's opponents; it is sufficient to say that the statements made on behalf of the Government* failed to convince, and that the motion was carried by 49 votes to 44. In the circumstances, of course, the cut could be no more than a "gesture", and on the 18th of March, when the clauses of the Finance Bill came up for consideration, it was announced that the Army Department Demand had been restored in full by the Governor-General in Council; nevertheless the defeat

* *See* Appendix III; also Chapter II, pages 57-59.

of the Government on this point was significant and regrettable.

The course of the Finance Bill through the Assembly was not such as to require our attention at this stage; six days were devoted to its discussion, and on the 24th of March, in slightly amended form, it was duly passed. The one remaining matter connected with the budget proposals to which we need refer was the passage of the Cotton Textile Industry (Protection) Bill. This, as has already been indicated, gave rise to acute controversy,—the main objection raised against the Bill being that brought forward in the speeches during the general discussion on the Budget from which we have already reproduced extracts, namely the contention that the differential rate of duty proposed would be equivalent to the introduction of Imperial Preference, and that while a self-governing Dominion of India might be willing to grant a preference to British goods, the House should refuse to consent to proposals which had this effect, while the administration of the country's affairs remained to a large extent in the hands of a bureaucracy irresponsible to the Legislature. The case for the Bill was argued at some length by the Commerce Member, Sir George Rainy, on the 13th of March, when the discussion on the motion to consider was opened, but since this speech was in large measure supplementary to that made by the Finance Member in introducing the budget on the 28th of February, of which substantial extracts are set forth in Chapter VII, there is no need for us to recapitulate his points in detail here. Perhaps the most essential sentence in the speech was the following: "In substance, what the Government of India feel is this, that the 20 per cent. duty imposed all round would raise the cost to the consumer of enormous quantities of goods which are not in effective competition with Indian made goods, and that the benefit which the Indian manufacturer could derive from the duty, within the period of three years for which it is proposed that it should be in force, would be very small, the reason being that the great bulk of British goods imported into India are woven from the finer counts of yarn, and it is not likely that, within a period of three years, the Indian manufacturer would be able to produce any substantial quantity." On the 27th of March, when the motion to consider the Bill had at last been passed and the discussion on its clauses was opening, two amendments were proposed, one by Mr. Chetty and the other by Pandit Madan Mohan Malaviya, the leader of the Nationalist Party. The former, to which

it became known that the Government was willing to lend its support, did not imply any far-reaching alteration in the substance of the Bill, since it proposed no more than to remove the differential element in the proposed duty in respect of one particular class of goods; the latter, however, was radical, and postulated complete equality of the duty on imported cotton textiles irrespective of the country of their origin. The subsequent debates, in which the principal speakers were Pandit Madan Mohan Malaviya, Mr. M. A. Jinnah, Mr. M. S. Aney, Mr. G. S. Hardy, Diwan Chaman Lall, Pandit Hirday Nath Kunzru, and the Hon'ble Sir George Rainy, were prolonged by the introduction of a discussion on the real meaning of the Fiscal Autonomy Convention between the Secretary of State, and the Government of India and the Indian Legislature, and on the morning of the 31st March, the last day of the Session, the President urged that the Government should reconsider its position and tell the House that it had not finally decided to drop the Bill in the event of the House amending its proposals. The Government, however, was of opinion that such action on its part would amount to an abnegation of its responsibilities, and at the conclusion of the debate, the House divided first on Pandit Madan Mohan Malaviya's amendment, which was lost by 60 votes to 44, and Mr. Shanmukham Chetty's amendment was subsequently adopted by a majority of 20. But before the Bill, as amended, was actually passed, first Pandit Madan Mohan Malaviya, the leader of the Nationalist Party, and his followers, and then Diwan Chaman Lall and the other members of the new *Swaraj* Party, rose and left the House. At the end of the day, before adjourning the House, the President asked each member to shake hands with him, saying that " we do not know whether the next Session will be held or not, or even if it is held, we do not know how many of us will be here." On this painful note of interrogation the Delhi Session of the Legislative Assembly was concluded.

Unfortunately, depressing and significant though the events of the last day of the period with which we are concerned undoubtedly were, the tale is not yet complete. For Mr. Gandhi, despite the fact that, a few weeks after the meeting of the Congress at Lahore, he had pronounced India unfit for civil disobedience, had changed his mind,—for reasons which we do not propose to analyse,—and on the 12th of March he formally initiated the movement by setting out in procession from Ahmedabad to the sea to break the Salt

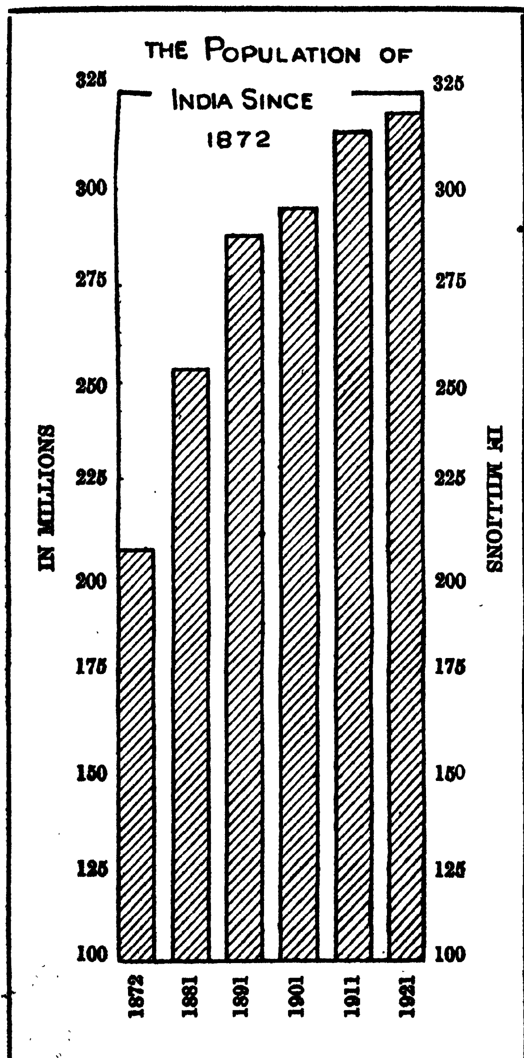
Laws. Thus by the end of the period under review, the high hopes which had been aroused by the constructive act of statesmanship of the previous October had sunk very low, and although there remained many eminent and influential leaders of opinion who whole-heartedly deplored the action which Mr. Gandhi had elected to take, they had no effectual means of checking it, or of rallying to their support the immense number of reasonable men who viewed the inauguration of civil disobedience with misgivings.

CHAPTER IV.

Agriculture and Industry.

Of the two basic human activities, Agriculture and Industry, which will form the subjects of this Chapter, the former is, in India, by far the more important. This is due to the fact, which readers in Western countries sometimes find it difficult to appreciate, that the functional distribution of the inhabitants of India is radically different from that of the peoples in the highly developed States of Europe or America. Throughout this sub-continent there are 35 towns which contain 100,000 persons or more, and their combined population amounts to about 8¼ millions; a further 54 towns hold between 50,000 and 100,000 inhabitants each, and account between them for an additional 3½ million people. But even if we class as towns every aggregation of dwellings that contains over 4,000 inhabitants, the total number of townspeople in India cannot by any ingenuity of calculation be computed at more than 33 millions; and since her total population is not less than 320 millions, almost 90 per cent. of it is purely rural, whereas the corresponding figure for a country such as England does not exceed 21 per cent. Thus the problems of rural India, despite the comparatively small amount of popular attention which they receive, both in this country and abroad, are actually of vastly greater importance than the more obvious problems of the towns.

Let us make a brief attempt to visualize the environment in which nearly 290 millions of the country's inhabitants lead their lives. The villages of India number at least 500,000, and of these the great majority are mere clausters of flat-roofed mud huts, microscopic in scale when compared with the immense background of plain or forest or mountain against which they are set. Even now, despite the remarkable improvements in communications which have taken place, only a small proportion of these villages have either railways or metalled roads within several miles of them, and the rest must be approached by rough cart-tracks or winding pathways between the fields, of which the former alone can afford passage to bullock-wagons and such other wheeled traffic as there may be, during the seasons when floods do not



REASONS FOR INCREASE OF POPULATION

PERIOD	INCREASE DUE TO: INCLUSION OF NEW AREAS	INCREASE DUE TO: IMPROVEMENT OF METHOD	REAL INCREASE OF POPULATION	TOTAL	RATE PER CENT OF REAL INCREASE
	MILLIONS	MILLIONS	MILLIONS	MILLIONS	
1872 - 1881	33·0	12·0	3·0	48·0	1·5
1881 - 1891	5·7	3·5	24·3	33·5	9·6
1891 - 1901	2·7	·2	4·1	7·0	1·4
1901 - 1911	1·8	-	18·7	20·5	6·4
1911 - 1921	·1	-	3·7	3·8	1·2
TOTAL	43·3	15·7	53·8	112·8	20·1

interrupt them. Thus many millions of Indian villagers are according to Western standards extremely isolated and remote from the events of the world at large. Those that happen to be situated within a few miles of towns, or railways or good roads, are in a position to widen their outlook and acquaint themselves with larger happenings than those which village society provides, and can also market their surplus produce for consumption either in urban India or abroad; but the others are still to a great extent self-sufficing, both economically and culturally. Occasional wandering men and pedlars of course pass through them, bringing stories of the outer world, but as to most of these villagers a journey even to the neighbouring town is a serious adventure only to be undertaken after much thought and preparation, the interpretation which he puts upon such casual and highly-coloured tales as reach his ears is as a rule peculiar. Thus throughout the greater part of the country the typical self-contained Indian village community, which has been maintained unmodified for centuries, still exists,—an interesting and surprisingly intricate social organism, in many ways resembling the characteristic rural unit of which we read in histories of mediaeval Europe, and containing its landholders and tenants and agricultural labourers, its priest and its *faqir*, its money-lender, and a whole order of artisans,—the carpenter, the blacksmith, and the weaver, the potter and the oil-presser,—each with his clearly prescribed functions hallowed by centuries of tradition.

But the most characteristic feature of the rural masses of India is, of course, their poverty; and we must at the outset endeavour to give the reader some idea of the magnitude and intractability of this problem, and of the steps which are being taken to deal with it. To interpret it in easily comprehensible terms,—such as the average income per head of the population,—is, however, no easy matter, not only because of the variety of conditions that are found throughout the sub-continent, but also because of the difficulty of estimating the true economic resources of the average individual in a country which is passing by unequal transition to different localities from a natural to a monetary economy. The standard estimate of the minimum average income for all India which was made towards the close of the last century worked out to some Rs. 30 per head per annum, and this figure is still occasionally

quoted in the Press and elsewhere as affording some guide to the average income to-day; but there is reason for holding that it no longer possesses any general applicability. In Madras, for example, the Statistical Branch of the Department of Agriculture published not long ago a careful calculation of the average annual income earned per head by agriculturists throughout the Presidency, which amounted to a little over Rs. 100 for 42·3 million persons; and investigations undertaken in Bombay yielded results not dissimilar,—the net *per capita* annual income working out at about Rs. 100 for urban, and Rs. 85 for rural areas. The general conclusion suggested by a study of such data as are available therefore is that there has been a gradual improvement in the financial circumstances of the masses during the last few decades,—though this process has undoubtedly received a check, whose extent it is not at present possible to compute, by the serious fall which has recently occurred in the prices of agricultural produce.

In any case, it is clearly a fact that a large proportion of the inhabitants of India are still beset with poverty of a kind which finds no parallel in Western lands, and are living on the very margin of subsistence. This is indeed the normal state of the millions of agricultural labourers who do not hold land themselves, and whose income consists mostly of customary wages paid in kind. Such of them as happen to live in the neighbourhood of towns can sometimes help themselves during the slack periods in agricultural operations by labouring for town wages, but in the nature of things this resource is open to but a small proportion of the total number. The landholders, even those who hold small fragmented plots, are generally in a better position than the labourers, because they, at least, have something on which they can raise credit; but this is often their undoing, for if they are not already encumbered by debts inherited from their fathers, their need for cash in times of stringency, or on the occasion of religious or social festivals, puts them in the hands of the money-lender, and years may elapse before the loan can be repaid. However prudent and thrifty the Indian small-holder may be, he has as a rule the utmost difficulty in keeping out of debt, since the resources on which he can fall back in bad seasons are meagre in the extreme, and at the best of times he has to wait several months for a return for his labour and expenditure. Of late years something has been

done to release him from this state of constant indebtedness,—we shall shortly see,—but the process is one of immense complexity, and cannot be expected to show rapid results.

Another evil which is a very grave handicap to the prosperity of the Indian peasant, but which has also been mitigated recently to some extent, is the fragmentation of holdings which is almost general throughout the country, owing largely to the operation of the indigenous laws of inheritance. In the South and East of India the average holding is about 5 acres, and elsewhere not more than half the holdings exceed even this small limit. There are innumerable cultivators whose total holdings amount to one acre or less, and even these tiny areas are often split up into a number of disconnected fragments; not infrequently some of the component parts are so small that the owner cannot cultivate them without trespassing on his neighbour's land. In the Ratnagiri District of the Bombay Presidency, individual plots are sometimes as small as 1/160th part of an acre.

Indebtedness and fragmentation of holdings are however material difficulties,—ultimately amenable, in spite of their complexity, to material remedies. Much more difficult, since the Government has fewer means of dealing with them, are the psychological causes for the present state of the Indian masses. There is for example the fact that the whole structure of traditional Indian society tends to discourage both the habit of mind and the method of life upon which the successful pursuit of economic prosperity depends, by implying that the production and accumulation of wealth is not one of the necessary functions of mankind. It is of course a fact that the concentration upon purely material standards of value, which is at present so characteristic of the Western peoples, causes profound uneasiness to the best intelligences among them; and on philosophical grounds it might be legitimate to urge that the powerful religious sentiment which causes large numbers of Indians to regard their lives as unimportant items in the great fabric of past and future, whose only justification lies in the means they provide for advance towards spiritual perfection, embodies something altogether nobler than the popular ideals of the West. But obviously this attitude is a grave handicap to the country's economic advancement. And even supposing British administrators had been so bold as to feel it was their duty to

disturb a state of mind which has persisted for centuries amongst hundreds of millions of people, the task has been far beyond the resources which the Government hitherto has been in a position to command.

Associated with this fundamentally uneconomic bias of Indian psychology is the fact that throughout the country at large manual labour still implies a loss of dignity, and whole castes are consequently debarred from productive activities. The number of religious mendicants who subsist upon the charity of the poor is so great as to impose a burden which many countries more wealthy than India would not dream of sustaining. And the joint family system,—whatever its merits from other points of view,—undoubtedly discourages individual initiative and penalizes the able and industrious for the benefit of the idle. Moreover, the social life of even the poorest workers is characterized by what from the economic point of view can only be described as recklessness; probably in no country in the world where the average production is so low, do the inhabitants expend so large a proportion of their resources upon socio-religious obligations such as festivals, marriages, and funerals. Further difficulties are raised by the fact that religious sentiment prevents the production and use of valuable food; as a result of the veneration of the cow, the economic possibilities of cattle cannot be fully exploited, and they have consequently become a serious drain upon the resources of the country. At the Bangalore meeting of the Board of Agriculture in 1924, it was estimated that out of the 146 million cattle then in British India, 16 million oxen and 8·5 million cows were, allowing for all deductions, entirely superfluous; and the cost of maintaining them is believed to amount, at the least, to Rs. 176 crores annually, which is over four times the entire land revenue of British India. The problem was carefully investigated by the Royal Commission on Agriculture which was appointed in 1926, and it was evident from the facts accumulated in the Commission's Report that the superfluity of useless or inefficient cattle constitutes a vicious circle wherein the agricultural resources of the country are being gradually undermined, since the prejudice against destroying such animals is leading to a progressive reduction in the economic utility of the bovine population as a whole. Again, the diet prescribed by religious sentiment for large portions of the Indian people

would be accounted in a Western country as definitely uneconomical. Milk and clarified butter are here considered to be among the bare necessities of life; but even a wealthy country does not use butter in the wasteful manner common in India. Considerable economic inconvenience also arises from the religious prejudice which still persists in many parts of the country against the use of animal manures, such as *poudrette* or bone-meal; whilst on the other hand the practice of burning cowdung as household fuel rather than allowing it to enrich the soil involves Indian agriculture in immense losses every year. Again, the fact that animal life is sanctified by religion handicaps the peasants in protecting their crops against such pests as monkeys, flying foxes, squirrels, jackals, porcupines, and rats; and the annual loss caused by the depredations of these creatures is enormous.

Very serious also is the loss to which the country is subjected by the widespread prejudice against the employment of female labour. It is of course a fact that large numbers of Indian women do habitually work in the fields, and that where this is not the general practice the women of certain agricultural castes are permitted to do so within their own families; and it is also true that *purdah* is ceasing to be as rigidly enforced as it was. Nevertheless there remain vast tracts of rural India in which about half the population is tied to activities within the home and is not available even for the urgent operations of harvesting, upon which the prosperity of the whole neighbourhood throughout many months depends. And so deeply ingrained in the Indian mind, even now, is the idea of segregating women and discountenancing female labour, that great difficulty is experienced in explaining that the countries of the West, with all their resources, could not possibly maintain their present economic standards if so large a proportion of their population were practically debarred from productive activities. Yet a further difficulty is raised by the fact that the traditional organization underlying the whole of Indian life prevents the cultivators from eking out their scanty resources by subsidiary occupations. Even in Europe or America the small-holder would be hard put to it if he did not devote a portion of his energies to industries such as poultry keeping, fruit growing and sericulture. But despite the fact that the cultivator in many parts of India is obliged by

climatic conditions to remain idle for more than one-third of the year, he has hardly begun to consider the possibility of engaging in industries accessory to agriculture. The gravity of this state of affairs has been clearly perceived of late; and many provincial Governments, as we shall see in Chapter X, are engaged in encouraging the development of cottage industries. Mr. Gandhi and his followers have also been making strenuous attempts to popularize hand spinning and hand weaving, and although their estimate of the benefits which this single group of activities would bring to rural India may be exaggerated, it is at least obvious that valuable service can be rendered to the country by emphasizing the necessity of organizing subsidiary industries to occupy those working days in which agricultural activity is impossible.

Another factor which takes a large share in the responsibility for the present state of the Indian masses is health. A great deal of attention has recently been concentrated upon the appalling mortality or debilitation of mothers and infants that results from the traditional methods of midwifery in India, and from such practices as child marriage and other customs of the country. But it is perhaps not sufficiently realized that apart from this, innumerable villages and townlets all over India are perpetual breeding grounds for a host of grave diseases such as cholera, plague, small-pox, dysentery, typhus and typhoid, which could be to a great extent eradicated were it not for the unhygienic habits and apathy of the populace,—and which, besides the suffering they cause, involve the country in appalling economic loss. And the damage inflicted by yet another disease,—malaria,—is, as we shall see in Chapter VIII, so great as to constitute a problem by itself. The resolution passed in 1926 at the All-India Conference of Medical Research Workers should give the reader some idea of the deplorable state of public health in this country. It ran as follows:—
" This Conference beileves that the average number of deaths resulting every year from preventible disease is about five to six millions, that the average number of days lost to labour by each person in India from preventible disease is not less than a fortnight to three weeks in each year, that the percentage loss of efficiency of the average person in India who reaches a wage-earning age is about 50, whereas it is quite possible to raise this percentage to 80 or 90. The Conference believes that these

estimates are understatements rather than exaggerations, but, allowing for the greatest possible margin of error, it is absolutely certain that the wastage of life and efficiency which result from preventible disease costs India several hundreds of crores of rupees each year. Added to this is the great suffering which affects many millions of people every year. The Conference believes that the greatest cause of poverty and financial stringency in India is loss of efficiency resulting from preventible disease and, therefore, considers that lack of funds, far from being reason for postponing the enquiry, is a strong reason for immediate investigation of the questions."

It will thus be realized that the problem of the state of the Indian masses is truly staggering in its dimensions. It has its roots in long-standing customs which inevitably make for further distress as the population increases, since the available resources are confined within traditional limits by hidebound precedent. As time goes on, it may be hoped that increased development of these resources will gradually create a *per capita* standard of wealth sufficient for India's growing responsibilities as a nation. But unless individual initiative, combined with missionary effort on the part of the educated classes, can inspire the Indian agriculturist with the determination to better his position, it is not easy to see what any administration can do, beyond endeavouring to devise means for introducing more up-to-date agricultural methods and for educating the masses up to a point at which they will themselves realize the necessity for self-help.

Some progress has however undoubtedly been made, and we may now proceed to indicate what it consists in. Generally speaking there is, as we have already stated, definite evidence that,—if periods of exceptional economic depression are excluded,—the prosperity of the Indian people as a whole is gradually increasing. The growth in the number of third-class passengers on the railways during the last decade is a good indication that more money must be available after the bare necessaries of life have been met than was previously the case. The increased absorption of rupees, —which some years ago threatened the whole currency system of India with inconvertibility,—and the growing employment of silver for purposes of adornment by classes of the population accustomed within living memory to the use of baser metals, also seem to

point in the same direction. Perhaps more important as contributory evidence of a growing economic stability, is the manner in which during recent years the agricultural population has managed to survive both scarcity and famine. During the unusually bad season of 1921, for example, when the monsoon was generally deficient and prices exceptionally depressed, the proportion of the total population in receipt of relief was considerably less than 3 per cent. throughout the widespread area affected by drought, and the poorest classes, which on previous occasions of shortage had subsisted largely upon seeds and roots, remained able to purchase corn when the rupee only purchased 4 seers of it. Indications of improvement can also be seen in the growing consumption by the masses of such simple luxuries as cigarettes and mineral waters; in the steady expansion in savings bank deposits, of which some indication will be given in the next Chapter, and in the increased membership of co-operative societies, which will be discussed in Chapter X. There has moreover been a substantial increase in the value of land during the last few decades, as a result of the development of communications and irrigation, the registration of rates, and the sense of internal security,—this increase being considerably greater than the contemporaneous rise in the price of corn. Again, small industries are springing up all over the countryside, and there is a marked tendency for the primary manufacturing processes of agricultural products to extend to the small towns and even to the larger villages; as the traveller goes about the country now, he will frequently hear from the villages he passes the sound of a little engine working,—a sugarcane crusher, an oil presser, or a rice hulling mill. External economic influences are also gradually changing the conditions of village life; surplus harvests can now in many places be satisfactorily marketed, as a result of the slow but steady development of communications, and the Indian "money crops,"—tobacco, oilseeds, jute, cotton, or tea,—are playing an increasingly important part in international trade.

Mention has been made of the fact that the problems of rural indebtedness and the fragmentation of holdings have both been receiving attention during recent years, and that appreciable improvements have taken place. As regards indebtedness, the most effective solution lies in the development of sound co-operative

societies under the Co-operative Societies Act of 1912, which was designed to facilitate the introduction of village credit societies to replace the money-lender; and reference to the diagram opposite, and to the description of the working of the co-operative societies in Chapter X, will indicate what progress has hitherto been achieved. In addition, certain useful amendments to the law relating to money-lending have recently been made by the Government of India and several of the provincial Governments. The Usurious Loans Act of 1918 allows courts wide powers of interference whenever they consider that the terms of a loan are unfair; the Agriculturists' Loans Act, the Land Improvement Loans Act, and the Land Alienation Act in the Punjab are all examples of legislation designed either to keep the agriculturist out of debt or to save him from the worst consequences of his position. The co-operative societies have also proved very valuable as a means of dealing with the problem of the fragmentation of holdings. In the Punjab, where the Co-operative Movement has been particularly successful, the societies have for some years been carrying out consolidation of holdings by voluntary methods, and have already achieved some gratifying results; during the first five years of this work alone, 39,757 acres were consolidated. In the Central Provinces an officer has been placed on special duty to carry out the work of consolidation, and the Legislative Council in 1928 passed the Consolidation of Holdings Act to be applied to one division only, which gives power to not less than half of the permanent right-holders holding not less than two-thirds of the occupied area in a village to combine in a scheme of consolidation which, when confirmed, becomes binding on all permanent right-holders in the village and their successors. The Bombay Government also framed a Bill to deal with the consolidation of land holdings,—though subsequently it proved necessary to withdraw it.

Besides these primarily economic factors, there are also numerous cultural influences at work, which by widening the ideas of the Indian peasant should gradually enable him to improve his position. These will doubtless ultimately prove to be the most important ameliorating forces of all,—although in the nature of things many of them are somewhat intangible and difficult to define. One of the most concrete and obvious is the development which has been initiated in local self-government since the

establishment of the Reforms of 1920, which, again, will be described in more detail in Chapter X. The villagers are now empowered to undertake, through the *panchayats*, union boards and other small bodies, a certain amount of the detailed administrative work of their own immediate neighbourhood, such as control over the water-supply, village lighting, and grazing rights, and responsibility for the cleaning, repair and construction of local roads, drains, tanks and bridges. The various committees are also entitled to try members of the village for certain trivial offences. All this is designed to make the rural population conscious of having a new status within the general administrative frame-work, and should be of considerable educational value, by developing their sense of self-reliance and bringing them into better touch with the district and provincial authorities. Another very obvious factor is the substantial extension which has taken place in primary education during recent years; the mere ability to read puts within the villager's reach the means, and probably the incentive, to know something of what goes on outside his immediate neighbourhood. Again, although very many villagers are still, as we have seen, outside the range of modern means of transport, the network of railways and roads is nevertheless steadily creeping over the country's surface, and with every fresh advance brings new interests and opportunities to sections of the rural populace; the development of motor-transport is particularly valuable owing to its great mobility, and millions of villagers must by now have seen motor cars and realized something of their implications. The impending extension of air services across India is also bound in time to impress the imagination of the people anew with the power of the latest agencies of transport. And as time and space dwindle before the assaults of mechanical inventions, many other significant aspects of modern civilization are brought to the notice of the villagers; agents for new agricultural appliances, fertilizers, and so forth, are constantly extending the scope of their operations and establishing themselves in places which they would hardly have thought of visiting some years ago; the introduction of the more productive, scientifically selected varieties of the staple food crops is attracting an increasing amount of intelligent interest and co-operation; and new industrial products are coming into regular use and transforming habits and improving the standard

of living. And of all the various influences from the outside world which are in process of spreading to the villages, few have greater potentialities for enlightenment than wireless broadcasting; if provincial Governments, during the next decade or so, can adopt a really strenuous and effective policy for extending broadcasting facilities to rural India, it should prove a wonderful means of overcoming the physical barriers which have hitherto separated its inhabitants from the progressive movements of the rest of humanity and proved such an insuperable obstacle to their intellectual and material development.

It would of course be easy enough to exaggerate the actual and potential effects of all these various beneficial influences, and it is a fact that in hundreds of thousands of villages little if any perceptible improvement has taken place within the memory of living man, but nevertheless they are already operating upon a considerable proportion of the Indian masses, and there seems legitimate reason to hope that their range and efficacy will gradually extend.

Having now sketched in the human background, we may turn to consider the more technical aspects of Indian agriculture. The factors upon which agricultural operations ultimately depend are of course the nature of the soil, and the quantity and distribution of the rainfall. The types of soils that occur over such an enormous area as India naturally exhibit considerable variations, but four main types can nevertheless be recognized among them. One consists of the alluvial soils of the great Indo-Gangetic plain, which stretch all across the Northerly non-peninsular part of the country between the borders of Baluchistan and Burma; these, generally speaking, are the richest of all. Another type is that of the black cotton or *regur* soils derived from the Deccan trap, which are widely distributed throughout the Northern and Western portions of the peninsula itself and as a rule are also very productive; a third consists of the reddish soils overlying the rocks of the Archæan system in the South and South-East,—especially inland; and the fourth, of laterite soils that occur sporadically all round the coast. But although the number of soil-types is comparatively small, there are very great diversities of cropping; this of course might in any case be expected owing to the wide variations of climate that occur throughout the country, but an

important accessory factor is the markedly seasonal distribution of the rainfall, which renders it possible for "double cropping" to be almost universally practised. The season both for the summer, or *kharif*, and for the winter, or *rabi*, crops is however short, and their yield is of course closely dependent upon the quantity of the monsoon rains, which, as we shall indicate later in this Chapter, when we come to consider the subject of Irrigation, is subject to great local variations despite the remarkable regularity, both in amount and in date, of the average annual rainfall for the country as a whole. The *rabi* crop in Northern India is particularly dependent on the termination of the monsoon not being premature or too abrupt. To the peoples of Europe, who are accustomed to irregular periods of precipitation throughout the whole year, the richness and productivity of lands such as India, where so many of the twelve months are almost invariably rainless, is sometimes difficult to understand; but in the tropical or sub-tropical parts of the world, in which occasional showers are of scarcely any agricultural value owing to the rapidity with which evaporation takes place, a climatic arrangement whereby intense and widespread rainfall occurs during three or four months only,—which, incidentally, would otherwise be the hottest of the whole year,—has actually many advantages, especially when the rainfall can be supplemented by irrigation.

The total area of India amounts to 1,166,385,000 acres, of which 666,996,000 are contained within the nine major Provinces of British India, the remainder consisting of certain specially administered areas, such as the North-West Frontier Province and British Baluchistan, together with the territories of the Indian States. In 1927-28,—the latest year for which detailed figures are available,—it was estimated that of these 669,996,000 acres, 149,643,000, or 22 per cent., were unavailable for cultivation, owing to their being absolutely barren, or unculturable, or covered by buildings, water, roads, and so forth. Most of the barren or unculturable lands are situated, as one would expect, in the hilly tracts of Burma and Southern India, in the Himalayas, and in the dry and desert regions of the North-West. A further 86,985,000 acres, or 13 per cent. of the total, were occupied by forests. Of the balance of 430,386,000 acres, or 65 per cent. of the total, that represented the area available for cultivation, 51,029,000 acres were fallow, and 155,477,000 consisted of culturable waste, that is to

say of lands which had either never been cultivated or had been for some reason abandoned. Thus the net area actually sown with crops during 1927-28 was 223,862,000 acres[1], or 34 per cent. of the total. If, however, lands sown more than once during the year are taken into consideration, the gross sown area in 1927-28 amounted to 255,862,000 acres[2]. Of this area, food-crops occupied about 207,569,000 and other crops about 47,950,000 acres. Among the food-crops, food-grains,—that is to say cereals and pulses,—covered as much as 196,679,000 acres, and the other food-crops,—including sugar, condiments and spices, fruits, and vegetables,—only 10,890,000 acres. By far the most important of the food-grain crops was rice, with which 76,607,000 acres were sown; the corresponding figures for the millets, (*jowar*, *bajra*, and *ragi*), and for wheat,—which, exclusive of rice, covered the largest areas,—being 39,162,000 and 24,569,000 respectively. Of the non-food crops, fibres, such as cotton, jute, and hemp, occupied 18,811,000, oilseeds 16,123,000, and the remainder,—consisting chiefly of dyes and tanning materials, tobacco, tea, coffee, opium, and fodder-crops,—13,016,000 acres.

The first general quinquennial census of the livestock of British India was undertaken in 1919-20, and the second in 1924-25. At the latter date the total number of livestock in British India was 216,819,000,[3] the bovine population alone,—that is to say oxen and buffaloes,—totalling 151,146,000. Sheep and goats amounted to 61,897,000, and the remainder, consisting of horses and ponies, mules, donkeys, and camels, to 3,776,000. Thus it will be seen that by far the largest class of livestock in India is the bovine; and although a large number of these cattle are, for reasons we have already indicated, economically superfluous, there would in any case tend to be, in India, an unusual numerical predominance of cattle over the other classes of livestock; for despite the fact that one out of the three services which cattle render to mankind throughout the rest of the world, namely the production of meat, is, for religious reasons, of practically no value in India, the other two,—that is to say the provision of milk, and of means of trans-

[1] The corresponding provisional estimate for the year 1928-29 was 228,000,000 acres.

[2] For 1928-29, the estimated total was 262,000,000 acres.

[3] Livestock censuses are undertaken in Burma and the Central Provinces annually, and figures for these areas are available up to the year 1927-28.

port,—are of quite exceptional importance. So essential, indeed, are the uses of oxen as draught animals in this country, that without them, both cultivation, and the transport of produce, would be almost impossible; and the necessity for the production of large quantities of milk, when the majority of the population is restricted to a vegetarian diet, is too obvious to require emphasis.

The system of land tenure in India exhibits almost every conceivable variation, from immense estates, containing thousands of tenants, to minute peasant holdings of well under an acre in size. It is, nevertheless, possible to classify the holdings into certain well-defined groups. When the revenue is assessed by the State on an individual or community owning considerable landed property, and occupying a position analogous to that of a landlord, the tenure is known as *zamindari* or "village community"; and when it is assessed on individuals who are the actual occupants, or are accepted as representing the occupants, of smaller holdings, the tenure is known as *ryotwari*. Under either system there may be rent-paying sub-tenants. *Zamindari* tenure may be either "permanently settled", which means that the land-revenue has been fixed in perpetuity, or "temporarily settled", in which case the revenue comes up for revision at certain specified periods. Village communities and *ryotwari* tenures are, as a rule, temporarily settled, and the land revenue assessed on them is thus liable to change from time to time. In 1927-28 the total acreage of *ryotwari* holdings was 346,669,000, of permanently settled *zamindari* or village community holdings, 121,631,000, and of temporarily settled *zamindari* or village community holdings, 198,816,000. 52 per cent. of the total area was therefore held by *ryotwari* proprietors, and 18 per cent. was held by permanently settled and 30 per cent. by temporarily settled *zamindars*.

Of the numerous grave defects of traditional Indian agricultural methods,—arising largely from social and religious causes over which the Government has little or no control,—and of the immense potentialities that exist for increased production under more scientific management, some indication has already been given; but, as we have seen, the Administration has for many decades been endeavouring to remedy some of these deficiencies, and by undertaking, in the absence of private activity, the functions of seedsman, manure seller, agricultural engineer, and implement dealer, has performed valuable services in bringing the more immediate

practical advantages of modern agricultural methods to the notice of Indian landholders. But until the time of Lord Curzon's Viceroyalty, when Departments were created both in the Central and provincial Governments for the specific purpose of directing State agricultural activities, and experimental farms, colleges, and research stations were set up in various parts of the country, little had been done towards initiating agricultural research in India itself. The progress achieved since that date has however been extremely impressive. Subsequent changes in organisation have largely consisted in a gradual decentralization of the administration of agricultural subjects, and the Government of India has been divested, except to a very small extent, of all direct powers of control over their development in the Provinces, the provincial Governments being now free to create their own agricultural services. But by the time these alterations were affected, the Indian Agricultural Service, which was constituted in 1906, had already a fine record of achievement to its credit, and although recruitment to this Central service has now ceased, the Government of India is still in a position to make an important contribution to agricultural progress by fostering research, which no provincial Government is as yet able to undertake on anything like an adequate scale; and the final establishment, during the year under review, of the Imperial Council of Agricultural Research, whose creation was one of the major proposals of the Royal Commission on Agriculture, which reported in 1928, should render these surviving activities of the Central Government even more effective.

Perhaps the most conspicuous of the results achieved, since the date of their establishment, by the Central and provincial Departments of Agriculture, has been the introduction over a wide area of improved varieties of the country's staple crops. It is now reported that the total area under such improved strains in 1928-29 exceeded 12,300,000 acres, a satisfactory figure in itself, but nevertheless necessarily also an under-estimate, since it is only by special detailed enquiries which have not as yet been universally undertaken, that the full area can be determined. The introduction of these improved varieties into general cultivation has only been achieved by means of patient plant-breeding work by modern scientific methods in the various agricultural institutions throughout the country, and by the widespread use of village demonstra-

tion plots; and the peculiar success of this branch of State agricultural activity is of course due to the fact that no scientific novelty is so readily accepted by the Indian farmer as an improved seed, since it involves comparatively little capital expenditure or risk, whereas the purchase of improved implements, or the introduction of improved methods of cultivation, necessarily makes a larger demand on his scanty resources. At the same time, the successful introduction of an improved crop more often than not paves the way for other agricultural innovations and for a general rise in the standard of farming. There is however still immense scope for further work in this direction, both by the development of research in plant genetics and by improvements in the arrangements for distributing seed, which, as we have seen, is still largely undertaken by the State,—or by co-operative organizations,—owing to the lack of private seedsmen.

The total ascertained area laid down to improved varieties of India's most important staple crop,—rice,—has now reached 976,943 acres, and in all Provinces where rice is extensively grown constant attention is given to the introduction of better types. At the December meeting of the Advisory Board of the Imperial Council of Agricultural Research it was decided to formulate a general scheme of rice research, and the details were to be brought up for examination at the meeting in June 1930. By far the most important rice-growing Province is Bengal, which has 19 million acres under this crop,—that is to say 71 per cent. of the total provincial cropped area; and the improvement of the Bengal rice crop has been the principal work of the Economic Botanist employed by the provincial Government for the last 20 years. As a result of the elaborate research work carried out at Dacca, a large number of varieties suitable for Eastern Bengal and also for parts of Assam have been brought into use. Proposals are now under consideration for more intensive research on the rices of Western Bengal and particularly on the fine variety grown in the neighbourhood of the Sundarbans, which forms the so-called "Patna" rice of commerce, and is of considerable importance both for local consumption and for export, especially to Great Britain, where its popularity is increasing. In Bihar and Orissa, the variety known as "Dahia", —an early transplanted rice,—is rapidly gaining in favour since it produces an early heavy-yielding crop of good quality. As a result of a partial survey of the rices of Orissa, three definite types of

medium-early, medium-late, and late rices have been established and are now being extensively distributed. In Madras, the rice research station at Coimbatore, with its sub-stations, now provides for the study of the rice crop for the whole Presidency with the exception of the North-Eastern portion, for which an additional sub-station is likely to be required in the near future. While it is not yet possible to say that improved varieties are available for every type for soil and climate in the Presidency, considerable progress has been made; and the area under improved strains is now reported to be 215,931 acres. In the Central Provinces, proposals are under consideration for the establishment of a special rice research farm at Raipur, which is the centre of the most important rice growing tract; the area under improved strains in the Province is now reported to amount to 181,696 acres. In the United Provinces, a survey of the rices grown has recently been completed by the Economic Botanist and published as a memoir of the Imperial Department of Agriculture. It is stated by the Director of Agriculture that the immediate need as regards this crop is a rice-research station in the area served by the new Sarda Canal. In Bombay the work of the Karjat rice station is now making itself felt in the Presidency proper, and important experimental work is in progress at Narkana on the testing of types for the new irrigated rice area under Lloyd Barrage Canal.

The rice crop of Burma, although it amounts to only 14 per cent. of the total Indian crop, has an importance of its own, since practically half of the annual production is available for export either to other parts of India, or abroad; indeed, of the total rice exported outside India, some 90 per cent. goes from Burma, and the movements of rice from Burma to other parts of India amount to as much as 1,000,000 tons annually. Burmese rice however has recently met with increasing competition in the world's markets, for reasons which will be explained in Chapter VI, and although the area under improved varieties already reaches 323,125 acres, it has been decided that more energetic action is required to improve the quality of the crop. New varieties which have been introduced into cultivation during the past two years have proved to be of higher quality than those previously tried, and the produce from all the selected strains put forward by the Department of Agriculture now stands at a premium on the market; arrangements are

also being made to establish a special rice-research station under a paddy specialist as soon as it can be financed. Moreover, considerable attention is being given to improving the methods of marketing.

More attention has been paid of recent years to the improvement of the various millet crops, which, as we have seen, come next in importance after rice. Millet specialists have recently started to work both in Madras and the Punjab, and selected strains are being tested prior to introduction. In the Central Provinces some important investigations into the potentialities of the big millet, *jowar*, have been in progress for a considerable time, and about 130,000 acres are now under improved strains. In Bombay it was found that the grading, by simple hand sieves, of *jowar* seed led to a striking increase in yield, varying from 30 to as much as 84 per cent., the best results being obtained from crops grown in the drier tracts. Already 574 seed grading sieves have been sold, and in Sholapur district 300,000 lbs. of *rabi jowar* seed were graded. The improvement of millets in areas of scanty rainfall, where a large proportion of the total crop is grown, presents peculiar difficulties. Final success is most likely to be achieved by varietal improvement together with the introduction of different methods of cultivation whereby such moisture as there is may be better preserved. In tracts of heavier rainfall, or where irrigation is available, the use of heavy yielding varieties would enable much higher yields of grain and fodder to be obtained, especially if cultivation and manuring were improved simultaneously.

The annual yield of the wheat crop in India varies from about 8 million to 10½ million tons, and as the amount required for internal consumption is approximately 8·8 million tons, there is sometimes no surplus available for export at all. This was the case during the years 1928-29 and 1929-30, when, as will be seen in Chapter VI, considerable quantities of foreign wheat, mostly Australian, had actually to be imported. Nevertheless, the exportable surplus of wheat, when it exists, is an important item in India's external trade. Fortunately, the possibility of improving the yield of the country's wheat crop attracted the attention of the Agricultural Departments from the outset, and, as a result, the ascertained area under improved strains now amounts to 4,126,905 acres. Many of these strains are not only higher yielding, earlier, and endowed with better standing power than those

which they have replaced, but are definitely of high grain quality producing " strong flour ". The now well-known wheat " Pusa 12 " is still the most important variety and has proved its adaptability to a very wide range of conditions; together with " Pusa 4 ",—which is also a useful type,—it has now become the standard wheat throughout a large portion of the United Provinces, where the system of seed-supply has been particularly thoroughly organized. The newer variety " Pusa 52 " has now established itself as the best wheat at present available for both North and South Bihar, and the provincial Department of Agriculture has recently taken up the organization of the seed-supply on a large scale. " Pusa 80-5 " a re-selection from " Pusa 80 ", has also done well in some parts of North Bihar. The new wheats,—" Pusa 111 " and " Pusa 114 ",—again yielded better at the Pusa Research Institute than " Pusa 4 " and " Pusa 12 ", the standard varieties, —whilst " Pusa 12 " and " Pusa 113 ", both selections from natural crosses on " Pusa 4 ", gave very promising results. Arrangements for organized trials of these new wheats on various farms have since been made. As in previous years, a careful study was made at Pusa of the incidence of rust on the various Pusa strains, and the results during the year under review were favourable. A number of new hybrids were under investigation either at Pusa, or, in the case of late-maturing types, at Karnal. In the Punjab, " Punjab 8-A " continued to extend and to replace the earlier selection, the area under this type now having reached 1,750,000 acres out of a total area under improved varieties of 2,100,000 acres. A number of new types are under study at Lyallpur with the object of providing varieties suitable to specialized conditions in different parts of the Province. Another investigation in progress at Lyallpur is intended to reveal the effect of the supply of water and of nitrates on the consistency of the grain, and evidence is accumulating that, provided that the lodging of the crop is avoided and the nitrate supply is ample, abundant watering does not cause mottling of the grain. In the Central Provinces, the outbreaks of rust in 1927-28 and 1928-29 afforded a striking demonstration of the value of the special rust-resistant strains that had been introduced, and the widespread demand for seed which consequently arose was met to the fullest possible extent by the creation of special organizations for purchase and supply. In Sind, " Pusa 12 " has already proved very popular, but a number

of new strains are also under trial, as it is realized that when large new areas come under perennial irrigation on the completion of the Lloyd Barrage Canal, strong free-milling wheats which will be able to compete successfully in the world's markets and also be suitable for Indian consumption will be needed.

The area under improved varieties of cotton continued to extend during the year 1928-29 and reached the new record of 4,131,000 acres. Research work on cotton is partly financed by Provincial Departments of Agriculture and partly by the Indian Central Cotton Committee. The most important development of the year was undoubtedly the success attained by a new type of cotton known as "Verum 262", produced by Dr. Youngman, which has proved suitable for large portions of the cotton-growing tracts of the Central Provinces and Berar. The crop in 1929-30 approximated to 6,500 bales, of which 6,000 bales were specially marketed, and it was found that on a commercial scale this cotton fetched a premium over Broach. It is estimated that 40,000 bales of this cotton will be produced in 1930-31, and special marketing arrangements are being organized in consultation with the Indian Central Cotton Committee. The rapid spread of "Verum 262" is largely due to its wilt-resisting qualities. In staple it is far superior to existing provincial types since it is suitable for spinning 18^s to 22^s, as compared with 10^s to 14^s for the Comra Cotton which it replaces. In the Bombay Presidency, the introduction and maintenance of pure types of cotton of good staple was continued. The area under improved varieties is now estimated at over 1,000,000 acres, and pure seed estimated to be sufficient to sow 400,000 acres was produced on seed farms under departmental supervision. A severe set-back however occurred in the quality of Surat Cotton, owing to the relaxation of the restrictions under the Cotton Transport Act, with the result that short-staple high-ginning types from further North have again penetrated into the best staple cotton areas and largely discounted the work of the Agricultural Department. In Madras, work on the improvement of cotton was continued, and the new strain of Cambodia cotton "Co. 2", previously known as "Cambodia 440", was found to combine satisfactory lint quality with yield as high as 1,000 lbs. of *kapas* per acre under fair cultivation. Work on the distribution of improved strains of Northern and Western cottons has also been continued, and it is now estimated that there are 350,000 acres under different

improved types of cotton in the Madras Presidency. In the Punjab, the area under improved strains of cotton amounts to over 1,500,000 acres, and during the year the Agricultural Department further extended its organization for supplying seed and issued sufficient for approximately 300,000 acres. The difficulty that has arisen owing to the adulteration of Punjab-American cotton with Desi cotton, however, persisted, and the reputation of this strain, and the price paid for it by Indian mills, declined considerably. Fortunately, the position is not irretrievable, as Punjab-American cotton is still grown mainly unmixed, and special steps have recently been taken to organize the marketing of unmixed cotton on behalf of the growers. As a result of the work of the Cotton Research Botanist, an early type of Punjab-American has recently been produced which promises to be superior to any of the existing strains and to be more tolerant of the severe climatic conditions which are often experienced in the Punjab cotton-growing districts. In the United Provinces, the research work,—financed jointly by the provincial Government and the Indian Central Cotton Committee,—on the control of the pink boll-worm, which has now been in progress for several years, yielded very definite results. The damage done to the crop by this pest ranges from 25 to 75 per cent. annually, and from a close study of the life history of the insect, it was found that though reinfection of the crop mainly takes place from live *larvæ* carried in seed, it can also occur by flight up to at least 4 miles. Experiments on an isolated block of land of 1,200 acres, including annually some 250 to 400 acres of cotton, showed that treatment of seed by heat was both a practicable and effective remedy. The effect on the yield was immediate and obvious, and the cotton from the treated area fetched a premium on account of its freedom from weak and stained fibre. A scheme is now being worked out for securing the co-operation of the ginning industry in remedial measures over an area of 4,000 square miles. As a preliminary step, an area of over 300 square miles was dealt with in 1929, which contained some 20,000 acres of cotton, and although it was too small to enable the full advantages of the method to be realized, the results were very encouraging. The Indian Central Cotton Committee's Technological Laboratory at Matunga in Bombay, continued its important work on testing cottons for Agricultural Departments. The ultimate problem on which the Laboratory is engaged is the correlation of

measurable characters with spinning value; but it incidentally undertakes useful spinning tests of all new cottons with which the Agricultural Departments are experimenting. The Committee also financed research on the wilt disease of cotton, on cotton pests, and on the physiology of the cotton plant with special reference to the shedding of bolls. It also contributed as usual about 80 per cent. of the working expenses of the Indore Institute of Plant Industry.

During the past two years the Indian sugarcane-growing industry has been passing through an exceptionally difficult period owing to the depression in the trade that has resulted from world-wide over-production; a brief description of the results of this state of affairs, from the point of view of the Indian industry, will be found in Chapter VI. Some relief is expected to result from the increase of Rs. 1-8 per cwt. in the duty on imported sugar which was effected under the Budget, as described in Chapter VII, and since the close of the year under review the Government of India has referred the whole question of the protection of the sugar industry to the Tariff Board for investigation. That the Indian industry has not suffered even more severely from the general depression has been due in no small measure to the spread of improved varieties of sugarcane. In the year 1929 the area under improved varieties was approximately 500,000 acres, or nearly 1/6th of the average cane area, the two most important varieties being those known as "S. 48",—which was evolved some years ago on the Shahjahanpur Sugarcane Research Station in the United Provinces, from an imported seedling cane,—and "Co. 213",—which until recently was the most successful of the new seedling canes evolved at the Imperial Sugarcane Station, Coimbatore. Other new varieties which have given valuable results are "Co. 290",—especially in the United Provinces,—"Co. 205", and "Co. 285" in the Punjab, and "Co. 210" and "Co. 214" in Bihar. Unquestionably the introduction of high-yielding varieties of cane which produce pure juices has done much to enable the small indigenous sugar factories,—and indeed the industry as a whole,—to survive. Recently, considerable progress in the technique of cane-breeding has been made at the Coimbatore Cane-breeding Station. A large number of new seedlings of considerable merit are now available for extended trial, and with the aid of the Imperial Council of Agricultural Research arrangements have been elaborated for systematically

testing new seedlings in various parts of the principal sugarcane-growing belt. The work at Pusa on the "mosaic" disease of sugarcane, which has been mentioned in previous issues of this Report, was continued during the year. A large number of Coimbatore seedlings were tested for susceptibility to the disease, and a study of the degree of mosaic infection in North-West Bihar was also carried out. Several years' work at Pusa shows that, by roguing, the disease can be controlled to a point where it no longer has an appreciable effect on the tonnage of cane, but that complete eradication by this method is practically impossible. Another sugarcane disease, which appears to be identical with the "Pokkahbong" disease of sugarcane in Java, has been under observation for the last four years; the disease shows a slight tendency to spread.

The tobacco crop of India, although it covers the comparatively small area of about 1,000,000 acres, is a valuable one. Approximately 1,000 million lbs. of dry leaf are produced annually, which is about 20 per cent. of the total quantity of tobacco produced in the world, and 90 per cent. of the production of the British Empire. The greater part of the output is consumed in India, but the export is by no means unimportant. In the tobacco-growing areas the system of cultivation is intensive and the crop employs a good deal of labour for several months of the year. The problem of tobacco improvement in India may be said to consist, firstly, in the production of good cigarette and pipe tobacco to meet the requirements of Indian factories and to replace the present imports of Virginia leaf; secondly, in the improvement of the Indian cigar tobacco; and thirdly, in the improvement of the stronger flavoured Indian tobaccos used for *hookah* smoking, and for chewing and snuff. The first problem is well on its way to solution as the result of the work carried out at Pusa. For cigarette tobacco, flue-curing is essential and also a 'milder' leaf. It has been demonstrated that the well-known American variety 'Adcock' can be grown satisfactorily both in North Bihar and in the Guntur District of Madras, provided that certain relatively simple changes in cultural methods are adopted. Curing barns for flue-curing are being profitably worked in both areas. Moreover, hybrids between the hardy and high-yielding Indian type, "Pusa 28", and 'Adcock' have now been fixed and tested, and one of these, "No. 177", gave a leaf whose colour when flue-cured was superior

even to 'Adcock'. Preliminary burning and smoking tests were carried out in collaboration with the India Leaf Tobacco Development Company and gave satisfactory results; and arrangements had been made to test this new variety on a large scale during the 1930 season. Flue-curing experiments are in progress in Bengal and a barn is also being erected at the Sa-aing Experimental Station in Burma. As regards high-grade pipe tobaccos, the American variety 'White Burley' has been satisfactorily grown at Pusa and hybrids have been obtained. This side of the work is perhaps of less immediate importance than the production of cigarette tobaccos, for the market for Empire pipe tobaccos seems at present to be well-supplied; nevertheless the ultimate possibilities are considerable. Work on Indian cigar tobaccos is already established on a considerable scale in Madras, Bengal, and Burma, and the next step appears to be the provision of expert assistance in the curing of the leaf. Experiments in cigar-making have been carried out at Rangpur for some years and have recently been transferred to Dacca. The Agricultural Chemist employed by the Government of Bengal is engaged on a study of the nicotine content of the various Indian tobaccos and the relation between this and their specific suitability for manufacture into cigar and cigarette, or *hookah* tobacco. The Indian cigar-making industry is already fairly important, both from the point of view of export and of internal consumption; as yet, however, much of the leaf for 'wrappers' is imported, and there is a demand for more good quality tobacco suitable for cigar "fillers". But the production of tobacco for use in India in the form of *hookah* tobacco, chewing tobacco, and snuff, naturally continues to be in many ways the most essential branch of the industry. Here the problem is largely one of increasing the yield per acre by the use of selected strains and by better cultivation,—points to which the various Agricultural Departments concerned are devoting attention.

Pulses form an essential feature of the rotations in most parts of India other than the great rice tracts, and play a very important part in the maintenance of fertility. The work carried out on the improvement of the various pulses is now yielding satisfactory results. The most striking example has been the introduction of a more suitable variety into Burma, as a result of which the area under gram has increased from 53,000 to 267,000 acres in 10 years. The Moki Lima bean has been found to yield well at Tatkon, and

a trial shipment to London gave encouraging results, sales being effected at £2 per ton above the price of the ordinary Burma white bean; the price at Tatkon itself was Rs. 6 per basket as compared to Rs. 4-8 for the ordinary bean. Prices for Burma white beans were in any case unusually high owing to the failure of the Manchurian bean crop, and under more normal conditions it is probable that the Moki Lima bean would fetch double the price of the ordinary Burma bean in Rangoon. A local shipment to Japan indicated that the 'Moki' bean would fetch a premium there if available in commercial quantity. The work on Indian gram at Pusa was continued during the year and the isolation of unit species completed; 86 distinct varieties of the crop have now been isolated, and a thorough study of the genetics of *Cicer aritinum* is now nearing completion, which will do much to enable really suitable strains to be provided for the many different tracts in which this important pulse is grown. Of considerable scientific interest has been the appearance of a new variety as a 'mutant' from an older type; the change is in the direction of a gigantism and cytological investigations are being made into it. Another important pulse,—the so-called "Pigeon Pea", "*Gajanus indicus*", has recently received a good deal of attention at Pusa owing to the possibility of selecting wilt-resisting varieties from it, and the isolation of unit species has now been completed; useful information has already been obtained on the correlation between wilt-resistance and certain definite morphological characteristics. Types whose wilt-resistance is high have frequently proved under normal conditions of cultivation to be heavy yielders also. Apart from the work at Pusa, pulses have also been receiving more attention lately at most of the provincial research stations.

The cultivation of ground-nut, an important leguminous oil-seed crop, continues to expand in Burma, Madras, Bombay, and Berar; expansion in the latter areas, where it is becoming an important rotation crop with cotton, has largely been rendered possible by the introduction of special early-maturing disease-resistant varieties. The recent fall in export prices, has been a handicap to growers, but is to some extent off-set by the increase of the indigenous crushing industry and the greater use of ground-nut oil in India. Other oil-seeds have also received attention. Work has been in progress at Pusa for some years on the possibility of combining, by hybridization, the qualities of "bold" seed and high

oil-content, that characterize the peninsular types, with other qualities, such as erect habit and shallow root-system, which are necessary for successful cultivation in the Gangetic alluvium. The hybrids are now in the fourth generation and several appear to possess the combination of characters required. Work on the crop is also in progress in the United Provinces, the Punjab, the Central Provinces, and Bihar and Orissa.

In all Provinces more attention has been paid in recent years to the question of fertilizers, both by experiments to determine the specific needs of different crops and soils, and by demonstration and propaganda. Steady progress in the introduction of green-manuring as a method of maintaining and raising the level of soil fertility has been made in the United Provinces, Bihar and Orissa, Madras, and Bombay. In most Provinces a considerable amount of work, both by experiment and demonstration, has been undertaken on the conservation of cattle manure and also on the conversion of waste material into composts. Particularly successful work in the latter subject has been achieved at the Indore Institute of Plant Industry. The use of oil-cakes as manures for the more valuable crops is steadily extending, and in Bihar and Orissa the question of utilising the fish-refuse from the Chilka Lake fisheries has been taken up. The demand for artificial manures, especially ammonium sulphate, has also developed considerably. At current prices the use of such manures on cereals,—particularly rice,—as well as on the more expensive crops like sugarcane, tobacco, potatoes and vegetables, has become a paying proposition, and in 1929 not only was the whole of the indigenous production of ammonium sulphate, estimated at 15,700 tons, absorbed in India but there was a net import of 22,964 tons. Considerable experimental evidence has now accumulated of the peculiar value both for rice and sugarcane, of the ammonium phosphate type of fertilizer, as compared with mixed fertilizers, in areas of phosphate deficiency. Steps are being taken by the Fertilizers Committee appointed by the Imperial Council of Agricultural Research to organize the collation of the results of experiments on fertilizers undertaken in the different Provinces.

Steady progress has taken place in most Provinces in the introduction of improved implements into agricultural practice. Sales of implements and spare parts through the Agricultural Departments were reported to have been 41,528 and 29,848

respectively in 1928-29, as compared with 35,838 and 24,240 in the previous year. As usual, ploughs achieved the largest sale, the number purchased being 27,478 as against 24,604 in 1927-28; a striking increase also occurred in the sales of fodder cutters, which rose from 3,481 to 7,341,—7,142 of which were sold in the Punjab alone. The figures for sales of spare parts are a satisfactory indication that the improved implements are being kept in use, and the number sold through the Agricultural Departments during the year amounted to 1,394; this total however is far from representing the progress really achieved, for in several Provinces the supply of implements is now being taken over to a considerable extent by private enterprise,—especially in cane mills, where practically the whole supply is in the hands of private firms, who either hire out the implements or sell them on the instalment system. The sales effected through the Agricultural Departments, therefore, largely represent no more than the first introductions of improved types into new areas. Some expansion has taken place in recent years in the use of tractors, the most marked development having taken place in Burma, where 48 tractors with ploughing tackle were sold during the year 1928-29, principally for use along rivers where flood-resisting paddies are grown. Considerable progress has also been made in other branches of agricultural engineering, especially in the improvement of irrigation wells and the construction of strainer tube-wells. There was an increase in the number of well-borings made by or through Agricultural Departments from 3,032 in 1927-28 to 3,952 in 1928-29; the number of strainer tube wells installed was 864, of which 519 were of the new stoneware strainer type, which possesses the advantages of costing about 50 per cent. less than any other strainer on the market and of being free from the risk of electro-chemical deposition of silica, which in certain soils renders many types of metallic strainer ineffective. Considerable progress has been made in the installation of oil engines and centrifugal pumps for lifting water. In the United Provinces 27 of the 71 tube wells completed during the year were equipped with power pumping plant.

To those familiar with India it will be obvious that such improvement as has been effected in the country's agriculture by the introduction of improved crops, new implements, and better methods of cultivation, can only have been rendered possible by well organized propaganda and demonstration. The work which

had been achieved in this direction was fully investigated by the Royal Commission on Agriculture during 1927, and subsequent progress has been largely along well-established lines. Ocular demonstration of the direct advantages of the new methods from the point of view of the cultivator's own local requirements is the fundamental principle underlying the educational activities of the Agricultural Departments. In India, unlike some other countries, relatively little can be done either by the supply of popular literature or by lectures,—although as subsidiary methods of propaganda the distribution of vernacular leaflets in simple language, and the use of the cinematograph and the magic lantern have not been neglected. But the village demonstration plot remains by far the most important means of agricultural propaganda, and in all Provinces the trained demonstration staff has steadily increased during the past two years. In some, activity is directed chiefly towards demonstration carried out on the cultivator's own land, the departmental demonstrator supervising the actual details of the improved method, whatever it may be, and leaving the general cultivation to the cultivator himself. In others, the tendency is to rent plots of land and carry out all operations under the supervision of the demonstrator,—a method which is particularly valuable when a combination of improvements have to be displayed. Departmental demonstration farms also play their part in the organization, and in addition there are the district or sub-divisional farms, which besides providing the means for a certain amount of experimental work, serve as centres for the distribution of improved types of seed and as headquarters for the district agricultural staff. The Royal Commission on Agriculture drew attention to the necessity for periodically assessing the relative effectiveness of the various forms of propaganda employed, and most Agricultural Departments have, during the last two years, undertaken a general survey of their achievements. Broadly speaking, the conclusion reached is that the different methods are not alternative but complementary, and that the proportion of energy and money which should be devoted to one or other of them must depend primarily on local circumstances. Closer relations have been established within recent years between the Agricultural Departments and various co-operative organizations, both in regard to propaganda and the production and distribution of improved seed and implements; the distribution of seed, in particular, has

lately been considerably facilitated by an extension of the activities both of registered co-operative societies, or seed unions, and of registered private seed growers who co-operate with the Agricultural Departments. The following figures, which are necessarily incomplete, will give some idea of the progress which took place in demonstration work during 1928-29:—the number of practical demonstrations given, in those Provinces from which returns have been obtained, was 47,431, as compared to 36,610 in the previous year; the number of illustrated lectures was 941 as against 843; and the number of agricultural shows that were held was 497 as against 340. The quantity of improved seed issued by Agricultural Departments was practically double that issued in previous years.

As regards agricultural education proper, as contrasted with demonstration and propaganda, the year has been distinguished by steady development rather than important changes. The Agricultural College at Cawnpore was affiliated to Agra University during the year, and the Agricultural College at Mandalay is the only one now existing which is not affiliated to a provincial University. The Government of Bihar and Orissa, accepting in principle the recommendation of the Royal Commission on Agriculture that, provided finances permitted, the Province should have its own Agricultural College, has provisionally formulated a scheme for the establishment of a College affiliated to Patna University, and placed an officer on special duty to work out details. The scheme for starting an Agricultural Institute at Dacca is still under consideration by the Government of Bengal. The Agricultural Research Institute at Pusa, and the Imperial Institute of Animal Husbandry and Dairying at Bangalore, which are Central institutions, have continued to provide facilities for post-graduate study in the various branches of agricultural science. The numbers of students who completed their courses during 1928-29 were 6 at Pusa and 11 at Bangalore; and at the close of the year the number of post-graduate students in residence at the former institution was 9 and at the latter 14. The question of reorganizing the Pusa Institute as a post-graduate training centre is shortly to be considered by the Imperial Council of Agricultural Research in accordance with the recommendations made by the Royal Commission.

The scope and character of the agricultural education which should be given in schools, as distinct from Agricultural Colleges,

has been in the past a matter of considerable controversy. The Royal Commission recommended that there should be no extension of the vocational type of agricultural schools such as those opened in Bombay and more recently in the United Provinces. But in the United Provinces it has been definitely decided that the Bulandshahr agricultural school will be continued and the second school at Gorakhpur proceeded with, since it is considered that there is a definite demand for this type of vocational education on the part of the agriculturists of the Province, and that it is the duty of the Agricultural Department to meet it. In several Provinces the "agricultural bias" type of school is becoming steadily more popular; as a rule these schools are managed by the Educational Department,—the Agricultural Department assisting by the provision of trained teachers and of technical advice.

There remains the question of adult education in agriculture to be considered. In most Provinces facilities are now provided for the training of adult cultivators in new agricultural methods and the use of improved implements, either through the medium of short courses at Agricultural Colleges or at departmental farms. The range of subjects is wide and the actual arrangements made vary according to local circumstances and needs, but it is clear from the reports received that this development has already assumed considerable importance in several Provinces and shows signs of expanding yet further. In the United Provinces there were 32 co-operative adult education societies at work which were actively assisted by the Department of Agriculture through the medium of vernacular lectures on agricultural subjects.

In last year's issue of this Report a detailed description was given of the progress which had been made towards fulfilling one of the main recommendations of the Royal Commission on Agriculture, by establishing the new body known as the Imperial Council of Agricultural Research, for promoting and co-ordinating agricultural and veterinary research on an "All-India" basis. On the 16th of July 1929, the Council was formally registered under the Registration of Societies Act XXI of 1860, the inaugural meeting having been held on the 21st and 22nd of June. Mr. M. S. A. Hydari, I.C.S., had assumed charge of his duties as Secretary to the Council on the 1st of June, and in July Mr. B. C. Burt, C.I.E., M.B.E., I.A.S., was appointed Agricultural Expert. On the 14th of September Diwan Bahadur Sir T. Vijayaraghava-

charya, K.B.E., previously Member of the Public Services Commission, assumed charge as Vice-Chairman. Shortly after the close of the year under review, the Animal Husbandry Expert,—Colonel A. Olver, C.B., C.M.G., F.R.C.V.S.,—took up his appointment.

Immediately after its establishment, the Council appointed a Committee to consider means for promoting the development of the Indian sugarcane-growing industry. The *interim* report submitted by the Committee was accepted by the first full meeting of the Advisory Board of the Council at Pusa in December, and confirmed by the Governing Body in the following week; the report contained a recommendation that the whole question of providing protection for the sugar industry should be referred to the Tariff Board, and largely as a result of the representations made by the Council, the Government of India, as we have seen, has adopted this course. The Committee has also been examining in detail a number of schemes of research into various aspects of the industry, and has already agreed on the desirability of adopting some of them, including the proposals for establishing a new sub-station at Karnal for testing seedling canes produced by the Imperial Sugarcane Expert, and for undertaking special experiments in three Provinces with the object of producing a better type of small power-driven cane-crusher suitable for use in a village unit. The Committee has also decided to advocate the creation of a chain of research stations throughout the principal sugarcane belt, and one of them,—a station in North Bihar,—has now been sanctioned. A scheme has also been sanctioned for researches to be undertaken at Pusa into the "mosaic" disease of sugarcane, and proposals are under consideration for work upon the physiology and water-requirements of the plant and the insect pests that afflict it. In order to provide technical assistance for proprietors of Indian sugar factories and advice to those about to establish new ones, the Council has appointed a Sugarcane Technologist who will have his head-quarters at the Harcourt Butler Technological Institute at Cawnpore, but whose services will be available under certain conditions for the benefit of all sugarcane-growing areas throughout India. A grant has also been made to the Cawnpore Institute to enable it to instal a complete model sugarcane factory for experimental purposes and for advanced instruction in sugar technology. The Government of the United Provinces has allotted a certain number of places in its Department of Sugar Technology

to students of other Provinces nominated by the Imperial Council of Agricultural Research.

In addition to sanctioning certain of the schemes for research into the sugar industry which we have described, the Advisory Board and Governing Body of the Council, at their meetings in December 1929, also sanctioned a grant of Rs. 4,800 *per annum* for 5 years to the University of Dacca for agricultural research, and a grant to Dr. K. C. Mehta, Professor of Botany at Agra, of a sum not exceeding Rs. 45,000 spread over a period of three years for an investigation into the "Rusts of Wheat and Barley". By the close of the year the total number of schemes for agricultural research which the Council had received for consideration at its next meeting amounted to 30.

Among the other important activities of the Council during the first year of its existence was the appointment of two committees, the one to advise on the steps which should be taken to deal with the locust menace, and the other to consider in general the question of the use of fertilizers in India, and to collate the results of manurial trials carried out in different parts of the country and suggest means whereby indigenous manurial resources might be better used and conserved.

The work of the Locust Committee has already progressed sufficiently far to require some description. When the Committee met early in February 1930, it was fortunate in having available for examination the recommendations of the Board of Agriculture in India which had met at Pusa in December 1929; and in the *interim* report which the Committee presented, in which the recommendations of the Board of Agriculture were accepted, certain specific proposals were put forward. Recognizing the urgent importance of co-ordinated effort throughout India to deal with the locust menace, the Committee invited the co-operation of all the Provinces, States, and Centrally Administered Areas exposed to it, both in the elaboration of measures of control and in the exchange of information; and as a result, a temporary Central Locust Bureau has been established to facilitate the collection, collation and interchange of knowledge and the issue of special locust workings when necessary. The exceptional loss caused by locusts in the United Provinces, the Punjab, and Sind in the late summer of 1929 had emphasised the immensity of the problem and the fact

that India was experiencing a visitation on a scale unprecedented during the last quarter of a century. Moreover during the end of February 1930 the North-West districts of the United Provinces, the greater part of the Punjab and practically the whole of the Punjab States were afflicted with another severe visitation. The Governments both of the United Provinces and the Punjab spent several lakhs of rupees in dealing with the situation, and the adjoining Indian States were also active in attacking the locusts within their territories, so that by the end of May 1930, when the remaining locusts had reached the flying stage, the destruction of hoppers was nearly complete. The visitation, however, was by no means over, as flying swarms were entering Sind and Rajputana from the West and laying eggs at the conclusion of the period under review. But, as a result of the methods of control, and of co-ordination of information, that have now been established, any future attacks can be dealt with much greater certainty and promptitude. At its second meeting the Locust Committee prepared a scheme of research into the biology of the desert locust and on the relative cost and efficacy of the more important methods of control. The present locust visitation in India is part of an extensive and exceptional migration extending from the Western Sudan through Egypt, Palestine, Iraq, Arabia and Persia into North-West India.

During the year under review most provincial Governments have been carefully examining the recommendations of the Royal Commission on Agriculture with a view to deciding how far they are applicable to particular local needs. The Government of India has already given effect to a number of the recommendations of the Commission and others are under examination in consultation with the Imperial Council of Agricultural Research. The Commission urged that the Board of Agriculture in India should be re-organized on a broader basis, and accordingly, with the concurrence of the Imperial Council of Agricultural Research, it has now been divided into two wings dealing respectively with crops and soils, and with animal husbandry and veterinary science, each of which will meet alternately once a year. By this arrangement a larger attendance both of technical officers and of non-official authorities at the Board Meetings should be rendered possible.

With the creation of the Imperial Council of Agricultural Research, the post of Agricultural Adviser to the Government of

India, which had previously been held by the Director of the Agricultural Research Institute at Pusa, was abolished. At the beginning of the period under review Dr. D. Clouston, C.I.E., M.A., D.Sc.,—who had held both these appointments,—proceeded on leave preparatory to retirement, and Dr. W. McRae (and subsequently, for a few weeks, the Vice-Chairman of the Imperial Council of Agricultural Research) officiated as Agricultural Adviser until the final abolition of the post in October. The work hitherto performed by the Agricultural Adviser is now undertaken by the Vice-Chairman of the Imperial Council together with the two full-time Expert Advisers in Agriculture and Animal Husbandry; and the Institute of Agricultural Research at Pusa and the Institute of Veterinary Research at Muktesar have each been provided with separate Directors who correspond direct with the Government of India.

Having now indicated some of the more outstanding points of interest which arise in connection with Agriculture in the more limited sense of the term, we must devote a brief section, before approaching such allied subjects as Forestry and Irrigation, to considering the problems of Animal Husbandry and Veterinary Science. Originally, the Indian cultivator relied very largely on nature for the provision of sufficient pasturage for his cattle, but during the last century or so, as a result of the persistent and extensive increase in population, vast tracts of pasture land have been ploughed up, and the supply of food available for cattle has consequently been very seriously reduced. Over a large part of India the livestock now have to subsist on fodder composed of the stalks and leaves of over-ripe grain crops, supplemented by a certain amount of stubble-grazing: and the fact that they are condemned to a diet of such low nutritive value, which moreover is hardly sufficient in quantity for even half the year, is one of the chief causes for the progressive deterioration of the bovine population of India, which, as we have seen, is one of the gravest of all the rural problems with which the country is confronted. If cattle-owners could be induced to grow fodder crops and to store fodder in the green state in silo pits or in stacks or barns after drying, as is done on Government farms, they would be secured to some extent against the deplorable fodder famines that occur, which interfere so seriously not only with the progress of selective cattle-breeding but also with agricultural economics

generally. There is however reason to hope that improvements of this kind may gradually be effected as a result of State encouragement. The most valuable of the leguminous fodder crops introduced by the Agricultural Departments is Egyptian clover or *berseem;* it is now being grown successfully in Bihar, Sind, the Central Provinces, the Punjab, and the North-West Frontier Province. At Pusa, a large area of irrigated land, which was previously lying waste, is laid down to *berseem* every year, after which a second crop of early maize is raised. Since it was first introduced on the Tarrnab farm in 1911, *berseem* has replaced Persian clover on 12,000 acres in the North-West Frontier Province, where the practice is to grow clover in every irrigated field once in three years. Among the new fodders introduced in Bihar and Orissa, *rata* grass (*Anthistiria cilista*) and soya beans are the most promising. Perennial fodders like elephant grass and guinea grass are being popularized in parts of Assam. The methods adopted on Government farms for making silage, whereby green fodders are stored in silo pits towards the end of the rains and fed to cattle in the dry weather, when grazing areas are parched and bare, is being demonstrated in the villages. An interesting improvement, both in the yield and quality of grass, has resulted from two fairly large forest areas having been placed under rotational grazing in the Bombay Presidency. In an experimental area on the sea coast, the yield of grass increased phenomenally when the first growth was turned into silage and the second growth was cut or grazed or both.

Improvements in the methods of feeding constitute one means whereby the problem may be, and is being, attacked. Another is by improvements in breeding. For some years the indigenous Indian breeds, many of which have obvious merits, have been subjected to careful study by the various agricultural institutions throughout the country, and pure-bred herds are being established as a nucleus from which the work can be extended. At Pusa, considerable progress has been made in the grading-up, by selective breeding, of a herd of Sahiwals or Montgomeries, and some interesting results have been obtained by crossing the less satisfactory milkers of this breed with Ayrshire bulls of high-milking pedigree. At the Government farms at Bangalore and Wellington, most of the cross-bred cows are now sired by Indian bulls of good productive pedigree, and special herds of Sindhi cows are being built up; and at Karnal substantial progress has been

made towards the establishment of herds both of Thar-Parkar and Hariana cattle and of Murra buffaloes. The Central Bureau for Animal Husbandry and Dairying, which the Government of India recently established at Bangalore, has already performed valuable services in stimulating and co-ordinating the activities towards the establishment of better herds which are proceeding in various parts of the country, and it seems likely that this aspect of its work will gradually extend.

The third way of bringing about some improvement in the state of the country's livestock is by an expansion of veterinary activities. As we have seen, the chief veterinary institution is the Government of India's Research Institute at Muktesar, with its sub-station at Izatnagar, whose work has been regularly described in previous editions of this Report. The most serious of the diseases to which cattle in India are subject is rinderpest, which as a rule causes well over 100,000 deaths a year. For some time the Institutes at Muktesar and Izatnagar have been manufacturing considerable quantities of anti-rinderpest serum, and during the year under review there occurred a most striking and satisfactory increase in the quantity issued for "serum-simultaneous" inoculations, the figure having risen to 810,655 doses as compared with 290,279 in the previous year. Among the researches initiated or in progress upon the disease during the year have been investigations of the climatic factors concerned in the production of a potent anti-serum; of the most suitable strain of virus for serum production; of the blood protein constituents of animals at the various stages in the rinderpest syndrome, and of the hydrogen-ion concentration of rinderpest anti-serum and the best method of routine estimation. Vaccination against the disease on the lines introduced by Kelser in the Phillipines gave encouraging results during the year, and it is hoped to continue work with this protective agent, using both Kelser's vaccine and the one recommended by Daubney in East Africa. As regards Johne's disease, which also causes considerable loss, the comparative study of several diagnostic agents, such as avian tuberculin and johnin, was continued. A strain of the bacillus of Johne's disease was isolated from a naturally infected cow and this is believed to be the first Indian strain to be isolated. It is hoped to be able to continue the work of finding a reliable diagnostic agent and a suitable method of vaccination against this disease. Some interesting results were also

obtained during the year in connection with the researches which have been in progress on avian pest or Ranikhet fowl disease, since an anti-serum obtained from fowls which had recovered from experimental infection, proved to be definitely protective against the disease. Comparative tests carried out with the viruses of Ranikhet fowl disease, Newcastle disease of England, and avian pest of the Philippines, appear to show that these three conditions are identical. The results of this investigation are being presented to the World's Poultry Congress, to be held in London in July 1930. At the request of the Board of Agriculture a small experiment was carried out during the year to test the toxicity to domestic animals of sodium fluosilicate, which has been recommended for the destruction of locusts. The experiment demonstrated that it is toxic in large doses, but as used in the field it appears that normally speaking no danger need be apprehended from it.

Another extremely important subject which requires our attention in this Chapter is Forestry. The existence of large tracts of growing timber is of immense practical advantage to every country which is so fortunate as to possess them,—but especially of course to those whose economic activities are mainly agricultural,—and an intelligent policy for tending them is the more important since many of the benefits which result from it are indirect, and spread over so large a period of years as to appear at first sight insignificant in comparison with the obvious gains to be derived from their despoilment or destruction; in a country like India, where such an overwhelming proportion of the population is entirely dependent upon the land for livelihood, the importance of proper administration of forest areas would be difficult to overestimate.

In so far as the immediate practical needs of India's immense peasant class are concerned, the value of the country's forests lies in the fact that they provide grazing and fodder for cattle, edible fruits and roots which are a real asset in times of famine, small timber for houses and wood for implements, and logs and sticks for household fuel as a substitute for cow-dung,—whose combustion for that purpose is, as we have seen, one of the most lamentably wasteful features of the traditional life of rural India, since it causes a perpetual and increasing impoverishment of the land by destroying the manurial values which ought normally, and according to all accepted scientific theory, to be returned to it. But

there is a limit beyond which these direct and obvious benefits cannot be obtained by the rural population without the sacrifice of certain ultimate advantages which are even more important; a balance must in fact be struck whereby forests are preserved as well as exploited, and the extent of new planting and of maintenance must be at least proportionate to the depredations, if grave losses are not to be incurred. Neglect of her forests in the past has caused India serious and permanent disadvantage. The historic forests of the Gangetic plain have been sadly depleted, and although in some places their disappearance has made room for cultivation, in others the once wooded slopes and plains are now barren and desolate. As the traveller goes about other parts of the country he will observe many examples of the deplorable results of the reckless or ignorant misuse of nature's provision of forest trees and the lesser growths of brushwood and scrub; ravines and barren lands will be noticed from which falling scree or sand is steadily encroaching on areas of good silt, and in new sterile hills faint traces will be seen of diminutive irrigation channels where springs and streams, long since dried up, enabled a vanished population to reap a harvest from ground which at present yields nothing better than cactus or dwarf palm. Fortunately, the forests that drape the high hills in which India's magnificent rivers rise are too vast and inaccessible to have suffered much from human inroads; but had it been possible to despoil them, it is certain that many of the great Irrigation Schemes which we shall shortly describe, and which of course depend for their existence on a regular and sufficient supply of river water, could not have materialized, and the immense benefits which they are conferring on the country would have been lost. The process of deforestation throughout the country as a whole must however have been in progress for many centuries before steps were taken to prevent it; and its serious effects began to be unmistakably revealed when the population started increasing substantially under the stabilized conditions of British rule. New demands for fuel, the extension of tillage and the increase of herds, the need for constructional timber;— all these requirements caused a fierce onslaught upon the forest areas. But happily the danger was perceived before really irreparable damage was done, and India consequently has the credit of having been the first part of the Empire in which the preservation of forests was seriously taken in hand.

The ultimate advantages which result from the proper preservation and administration of the country's wooded areas are two. The first, at which we have already hinted, arises from the profound effect which forests have upon the character of the climate, the extent and distribution of rainfall, and the depth and quality of the soil. The mere existence of large tracts of growing timber is in itself sufficient to stimulate a greater amount of precipitation than would otherwise occur, since trees in the ordinary processes of their metabolism transpire large quantities of water vapour into the atmosphere, and should the atmospheric moisture be already near the point of condensation, rainfall will probably be induced. Thus in those parts of the world in which the humidity of the air-currents is not very pronounced, the occurrence of rainfall,—which is of course the fundamental factor upon which all agricultural operations are based,—is intimately dependent upon the existence, especially in the hills, of an adequate amount of woodland; and there seems good reason to believe that within quite recent times the productivity of the soil and the density of population over large portions of the earth's surface, such as Greece and Tunisia and other regions bordering on the Mediterranean basin, for example, have been radically altered by the destruction of forests and the desiccation which has consequently ensued. Moreover, besides stimulating precipitation, forests preserve the moisture for good purposes after it has actually fallen, by absorbing it and doling it out gradually, instead of letting it run away to waste; and this in turn tends to prevent the occurrence of serious floods and the formation of gorges and ravines. And not only do they bind the valuable surface soil together with their roots and therefore save it from being gradually washed into the rivers, but by the formation of rich vegetable moulds they directly increase its fertility.

The other benefit which results from the possession of well-tended forests is of course the revenue obtainable from the sale of the more important forest products. In India the great variations of climate result in the existence throughout the country of widely different types of woodland,—such as the characteristic teak-growing areas of Burma and Southern India, the famous conifer forests of the lower Himalayas, and the dense ever-green vegetation of the humid districts to the East and around the coasts. But hitherto it has only been possible to exploit a very small proportion of the

country's enormous forest areas for the extraction of timber, owing to the difficulty of undertaking transport from the remote and difficult regions in which most of them are situated,—and also to the fact that natural seasoning cannot be profitably resorted to in a sub-tropical climate. In consequence there is an enormous wastage of good timber for which no commercial use can at present be found. Numerous endeavours have of course been made to reduce this loss, and an interesting experiment was recently undertaken by the Forest Department in the Madras Presidency whereby a substantial quantity of modern logging machinery, saw-mills, and seasoning kilns was installed in some of the more accessible forests; but unfortunately it is obvious that undertakings of this kind cannot do more than touch the fringe of the problem, and that the remoteness of the majority of the forests from all practicable means of transport must continue to prevent their full economic exploitation for an indefinite period. The best known and most profitable of the timbers grown in the forests are teak, deodar, and sal, which are used for constructional work; toon, padauk, and pyinkado; decorative woods such as rosewood and ebony; and sandalwood, which is exceptionally valuable owing to the high prices obtained for its oil. In addition, however, there has been a remarkable expansion during recent years,—largely as a result of the Wembley Exhibition and the work on the new India House in London,—in the market for the less famous timbers such as koko, Indian laurel, pyinma, and gurjan; and the value of exports from this country of all classes of woods exclusive of teak have increased from Rs. 17 lakhs in 1920-21 to Rs. 27 lakhs in 1929-30. But apart from the trade in timber, a very considerable revenue is derived from the sale of subsidiary forest products. Perhaps the most interesting of these, owing to its enormous potential importance, is bamboo, which besides the variety of obvious uses to which it is put, can now,—as a result of some remarkable research work achieved at the Forestry Institute at Dehra Dun,—be manufactured into paper pulp of satisfactory quality. In view of the immense areas over which bamboo is grown, the importance of this discovery needs no emphasis, and there is already reason to look forward with confidence to a time when a large proportion of the paper now imported,—its annual value amounts to between Rs. 2 and 3 crores,—will be manufactured in India. Investigations at Dehra Dun during

the year under review demonstrated that it should be possible to manufacture even badly mildewed bamboo into clean white paper on ordinary commercial lines. Amongst the other minor forest products are lac, tanning materials, essential oils, turpentine, and rosin,—all of which have established themselves firmly in the markets of the world. Private concerns in India are interesting themselves more and more in the commercial possibilities of the country's forests, and are developing the extraction of timber, the manufacture of matches and ply-wood and the production of paper-pulp. Generally speaking, so far as minor industries are concerned, the Government limits itself to the maintenance of model institutions through which instruction is imparted in the latest methods of work. Of the value of the trade in lac we shall see something in Chapter VI; and as regards rosin and turpentine there has been a steady increase in indigenous production during recent years, with the result that, except for small quantities purchased mostly from America for special purposes, imports of both these commodities have for some time practically ceased. The Indian rosin and turpentine industry is indeed quite capable of meeting all the requirements of the internal market, but as the demand for rosin is greater than that for turpentine, and as, in manufacturing rosin, turpentine in excess of what can be consumed in India is produced, an external market for the latter commodity has to be found, and this, recently, has proved difficult. Between about 1916 and 1922, world-prices for turpentine were exceptionally high, and the production and use of substitutes was thus greatly stimulated; these, at first, were of poor quality, but remarkable improvements were soon effected, and, in addition, many of them are obtainable as by-products of other manufactures and can consequently be sold extremely cheap. Moreover, during recent years, there has been serious over-production of turpentine itself in America, as a result of which prices have slumped from 48¾ cents. per American gallon in 1928 to 38 cents. in 1930. It is therefore not easy at present to market Indian turpentine at a profit, and tapping for rosin in some parts of the country,—as for instance in the Kumaun pine forests, —has had to be slowed down.

There was of course a considerable period during which the surplus earned by the Forest Department was comparatively small, although it is noteworthy that as far back as 1867 it amounted to

Rs. 17 lakhs; and in recent years it has been really substantial,—a fact which is the more satisfactory when we recall the peculiar geographical and climatic conditions under which Forestry is conducted in India, and that in the United States and Canada, where such difficulties are less, the forests remain unremunerative. The net profit derived from the country's forests for the year 1928-29 amounted to no less than Rs. 2¼ crores; nevertheless it would have been very much larger than this had ampler funds been available for development in the past. It is true that large tracts of forest are of such poor quality that they can never yield much profit; but at the same time there is no essential reason why the average net annual yield of the forests as a whole should not be substantially more than the present figure of 2 annas per acre. Some of the more fortunately situated forests have given a return of as much as Rs. 15 per acre per annum under intensive management; and were it possible to increase the average annual yield of the forests as a whole to a figure very much less than this, the net return to the State, even were there no increase in acreage, would obviously amount to an enormous sum. In New Zealand some years ago the interesting experiment was made of raising by means of loan the funds which were not available from revenue for forest development; and there seems little doubt that were such a policy practicable in India the investment would in the end prove immensely remunerative. At present no more than about a third of the vast area under the control of the Forest Department is dedicated to the production of saleable timber, and scientific experts are agreed that by increasing the acreage administered with a view to profit, by improving the quality of the stock and its resistance to disease, adopting better methods of extracting and marketing, and giving greater attention to minor forest products, it would be quite practicable, were the money available, to make the forests of India one of the most substantial sources of her revenue. Under present circumstances we are confronted with the paradox that despite her enormous resources she is, in the balance, an importer of timber,—although it is unquestionable that under a more intensive system of exploitation, and by the discovery of new uses for timber at present unmarketable, she could easily produce ample for her own needs and leave a handsome surplus for export. But even as things are, and without the expenditure of large sums of money, it is

possible to look forward to the immediate commercial future of the Indian Forests with confidence. As we have seen, there has already been a very satisfactory increase in the sale for the lesser-known Indian timbers, and in view of their intrinsic merits there is every reason to hope that this will continue. The discoveries at Dehra Dun of the possibility of manufacturing paper from bamboos should soon begin to yield financial results, and much valuable work is being done there in a multitude of other ways, such as the conversion of wood pitches into road tars, the adaptation of the waste products of the turpentine industry to commercial uses, and experiments into the suitability of various Indian timbers for the manufacture of fibres and matches and of high-quality wood-work such as panelling, furniture, bobbins, gun-carriages and rifles, which hitherto have had to be imported. Moreover from the geographical point of view India is excellently situated for increasing her shipments of timber overseas. The immense and valuable forests along the Western Ghats, down the Burmese coast, and in the Andaman Islands are conveniently near the sea, and there is every reason to suppose that in time, and by careful organization, it should be possible to increase their output very substantially and find profitable markets for it in many parts of the world which at present obtain their timber from other sources.

The nucleus of the existing Indian Forest Service came into being in 1865, as a direct result of the passage of the Indian Forest Acts. In earlier years its task was beset with great difficulties, since it was compelled to discharge the novel duty of protecting the heritage of nature from the thoughtlessness of man. At present the size of the territory under the control of the Department is more than twice that of the British Isles, and amounts to 250,000 square miles, or about one-fifth of the total area of British India; and although two generations or more have now elapsed since the Forest Acts came into force, it will be readily understood that the administration of so vast a tract of land, and its protection against despoilment, has not made the Department popular. The dependence of the Indian peasantry upon the forests in their immediate vicinity for numerous small benefits, naturally tends to prevent the broad national aspects of forest conservation from being properly understood, and restrictions upon the grazing of cattle, the felling of trees, and the lighting of fires, are frequently resented. The friction which sometimes in consequence arises between the

Department and certain sections of the public tends to produce the most lamentable results, as for instance during the Non-Co-operation Movement of 1920-22, when incendiary fires laid in the forests of the Punjab and the United Provinces, and in Indian States, obliterated within a few days the fruits of decades of careful conservation, and caused serious damage to the promising turpentine and rosin industries. The Government has however given ample proof that it realizes the necessity of arousing popular interest in the ultimate importance of the Department's work, and special steps are being taken to relax the rigour of forest restrictions in so far as this can be done without prejudice to the interests of the future. Many of the smaller reserves, which are chiefly valuable for the grazing which they supply to local cattle, have been handed over to village *panchayats* for management. In Madras, for example, the responsibility for tracts of forest covering in the aggregate about 3,200 square miles has been transferred; a special officer attached to the provincial Board of Revenue scrutinizes the work of the village committees, and decides how many cattle shall be allowed to graze in any particular area, and what the rent of that area shall be, but all detailed administration is left to the *panchayats* themselves. At present it is not possible to say whether these preliminary experiments are likely to be extended to other Provinces, but an officer of the Forest Department of the United Provinces was recently put on special duty to study the working of the innovations in Madras. It is in any case to be hoped that with the education of public opinion on the subject of forests, the delegation of authority which has been embarked upon will not be misused, for nothing could be more disastrous to the future of the country than the sacrifice of her forests to the immediate interests of a few generations. Even now, despite statements to the contrary, the amount of grazing permitted in Government forests impinges on the margin of safety. Excluding Burma and the Federated Shan States, no fewer than 9 million animals are allowed forest grazing at nominal fees varying from 2 annas to 2 rupees per annum, and an additional 4½ million get their grazing without charge at all. All unclassed forests, or those areas which have not been reserved or protected and are for the most part situated in inaccessible or undeveloped regions,—whose total area amounts to about 137,000 square miles,—are open to grazing, and on 84,000 of 113,000 square miles of reserved and protected forest, grazing is

also allowed. More than a quarter of the cattle of the Central Provinces and Berar graze in Government forests, and the percentage of the cattle of Bombay and the Punjab which have access to such grazing is also very considerable. The total annual value of the rights and concessions enjoyed by villagers every year from the administered forests is estimated to amount to no less than Rs. 66 lakhs. The opponents of the Forest Department commonly assume that an almost limitless extension of grazing in Government forests is possible; but so far from bearing this out, the figures already quoted indicate that such grazing rights as are already allowed, unless carefully controlled and scientifically regulated, would be capable of inflicting severe damage on the forest resources of the country.

For many years after its establishment the Department was too engrossed in the practical details of administration to take much interest in research, and it was not until 1906 that the Forest Research Institute at Dehra Dun was founded. Since then, however, —as we have already indicated,—the expansion in the scope and importance of this aspect of the Department's work has been very great, and during the year under review, in addition to the achievements we have described, valuable work was done in a variety of other ways, amongst which we may mention successful tests which were undertaken upon the uses of portable charcoal kilns; investigations which were made into the economic uses of the lesser-known plants of the Horsetail genus in India, which resulted in an increased sale for ephedrine, the valuable mydriatic drug extracted from them; work on the veneers of Indian trees, which facilitated the construction of laminated panels of a new type which are undergoing further tests; and new researches which were conducted into the methods of preventing the attacks upon trees of fungal disease and insect pests. A noteworthy event of the year was the completion of the new buildings for the Institute which have been under construction at Dehra Dun, and they were formally opened by H. E. the Viceroy in November 1929. Another important development was the appointment by the Government of India of an expert Committee, consisting of Sir Chunilal Mehta, K.C.S.I., M.A., LL.B., J.P., Professor F. A. Lindemann, F.R.S., and Mr. F. H. Wroughton, to define the lines of the Institute's future activities and development. The Committee was required to consider in particular the organization, working and control of the

Institute with special reference to the scientific and economic value of the work already done, and the desirability or otherwise of periodical scrutiny in the future; the need of ensuring co-ordination with a view to the better interchange of knowledge concerning the enquiries in progress at the Institute and similar investigations abroad, especially in America and Europe, and for providing suitable publicity of such results as are capable of utilization for industrial purposes; the system of recruiting members of the staff, especially technical experts; and the system of training Indians for scientific research. The Committee started its work at Dehra Dun in February 1929 and submitted its report to the Government in May. The more important recommendations made by the Committee related to the establishment of an Advisory Board for the Institute; the reorganization of the superior staff; the system of recruitment and training of officers required to fill technical posts; the training of officers abroad; and the interchange of research workers. The recommendations of the Committee were promptly taken into consideration by the Government in consultation with the Inspector-General of Forests, and orders have already been passed on some of them. Mention must also be made of an important silvicultural conference which was held at Dehra Dun in March 1929, in which representatives from all Provinces took part, and which made various recommendations now under the consideration of the Government.

Mr. (now Sir Alexander) Rodger, O.B.E., continued to hold the posts of Inspector-General of Forests and President of the Forest Research Institute and College at Dehra Dun during the year. Sir Peter Clutterbuck resigned his post as Timber Adviser to the High Commissioner in London and his place was taken by Mr. N. Tireman, formerly officiating Inspector-General of Forests and President of the Research Institute. Proposals for the revision of the Indian Forest Service *cadre* in Bihar and Orissa were sanctioned by the Secretary of State and involved *inter alia* a reduction in its strength from 17 to 15 members. Recruitments to the Service during the period under review totalled 7 Indians and 4 Europeans.

At the invitation of the Swedish Government, 2 delegates from India, namely Mr. G. G. Trevet, Vice-President of the Research Institute, and Professor of Forestry there, and Mr. S. H. Howard, Deputy Conservator of Forests in the United Provinces, were

deputed to attend the International Congress of Forestry Experimental Stations which was held at Stockholm in July 1929. The Congress decided to establish an "International Union of Forest Research Organizations" and to invite representative countries to join the Union. The question whether India should become a member of the Union, through the Research Institute, is at the time of writing held in abeyance pending the receipt of the official proceedings of the Congress.

We may now proceed to consider Irrigation, which is one of the most important factors in Indian agriculture, especially in those parts of the country in which the annual rainfall averages less than 50 inches. Generally speaking the whole of India is subject to the monsoons, which means that the flow of dry air from the bald stony *plateaux* of Tibet and Inner China in the North East,—which sets in during the autumn,—is checked and repelled about midsummer by a moist South-Westerly current drawn from off the vast expanse of ocean which lies in the direction of Africa. As a result, the average annual rainfall throughout the country as a whole, namely 45 inches,—is remarkably constant, the greatest deviation from the normal ever recorded having been no more than 7 inches. But despite this general constancy, the amount of rain discharged by the South-West monsoon is not only subject, at least in non-peninsular India, to a progressive and general variation as between West and East,—which ranges from a minimum of *nil* in certain localities at one end of the Indo-Gangetic plain, between Rajputana and Baluchistan, to a maximum of 500 inches at some places in Assam,—but also to very wide and unaccountable local variations, which not infrequently amount to deficiency or excess extending beyond 50 per cent. of the normal. It is of course these local fluctuations, even more than the general variation from West to East, that constitute the essence of the problem with which irrigation is designed to deal, since they are the chief cause of the famines which have been the bane of Indian agriculture since the dawn of history. Moreover it is unfortunately a fact that the lower the average annual rainfall is, the greater is its liability to serious deviation from the normal, and thus throughout almost the whole of the North-West Frontier Province, Sind, and the Punjab, the United Provinces,—except for the sub-montane regions,—a large portion of Bihar, most of the Madras and Bombay Presidencies exclusive of the coastal tracts,

and portions of the Central Provinces and Burma,—in all of which the average precipitation is less than 50 inches annually,—security against periodical famine or scarcity resulting from drought can only be obtained by some artificial means of securing a regular supply of water; and in some of the driest tracts, such as Sind and parts of the Punjab, the production of crops without irrigation would be altogether impossible.

This being so, systems of irrigation such as canals, storage reservoirs, wells, and dams across the beds of streams, dating back to many different historical periods, have long been familiar features of the Indian landscape,—and since the establishment of the present Administration, and the introduction of modern engineering methods, their number, extent, and efficiency has vastly increased. For the past quarter of a century irrigation has been developed in British India on the lines laid down by the Irrigation Commission appointed by Lord Curzon in 1901; but it was not till 1908 that irrigation statistics began to be systematically recorded. Since that date the progress which has taken place may legitimately be claimed as one of the most remarkable achievements of the British *Raj*. During the five years from 1921 to 1926 an average of as much as 11·8 per cent. of the annual cropped area of this country was irrigated by Government irrigation works, and the percentage of areas irrigated to areas sown in British India amounted to 19·4. The collective value of the crops raised in the areas irrigated by the State was 50 per cent. more than the total capital expenditure upon the irrigation works concerned. Of the various systems of irrigation in use, such as canals, tanks, wells, lift-irrigation from rivers, and temporary dams for holding up flood-water, canals are by far the most important,—although the utility of the tanks with whose construction the Government has been connected is, owing to their vast numbers, far from negligible; in the Madras Presidency alone there are over 35,000 petty irrigation works serving between 2½ and 3 million acres of land. The irrigation-canals of India are of two distinct types, namely those that are fed by perennial rivers and those that derive their water from artificial reservoirs. Generally speaking canals of the first type are found in the regions traversed by the rivers that rise in the Himalayas, whose snows yield an inexhaustible supply of water during the dry months of the year, while the latter are situated in peninsular India, where no such natural storage is avail-

able. The most important storage works are those in the Madras Presidency, the Deccan, the Central Provinces, and in Bundelkhand, which range in size from small earthen embankments to enormous dams such as that under construction on the river Cauvery at Mettur, in the Madras Presidency, which will be capable of impounding over 90,000 million cubic feet of water. Canals which draw their supplies from perennial rivers may be either perennial or inundation canals. The former are provided with head-works enabling water to be drawn from the river irrespective of its natural level; within this class fall the great perennial systems of the Punjab and the United Provinces. Inundation canals have no such means of control, and water only finds its way into them when the natural level of the river reaches the necessary height. The most important inundation canals in India are those in Sind, and indeed upon them the whole irrigation of this region at present depends. There are also important canals of this type in the Punjab.

During the year 1928-29 the total area, apart from that of the Indian States, which was irrigated by Government works amounted to 30·7 million acres. This represented 12 per cent. of the entire cropped area of the country, and was 2·4 million acres in excess of the previous record area of 28·3 million acres irrigated in 1922-23. The total length of main and branch canals and distributaries in use amounted to about 75,000 miles, and the estimated value of the crops supplied with water from Government works was Rs. 141 crores. The largest area irrigated was in the Punjab, where 11·5 million acres were irrigated during the year; moreover a further 1·5 million acres were irrigated from channels which, although drawing their supplies from British canals, lie wholly in the Indian States. Next among the Provinces of British India came the Madras Presidency with an area of 7·3 million acres irrigated, followed by the United Provinces with 4 million acres, and Sind with 3·6 million acres. The total capital outlay on irrigation and navigation works, including works under construction, amounted at the end of the year 1928-29 to Rs. 123 crores. The gross revenue was Rs. 11·8 crores, and the working expenses Rs. 5·1 crores, the net return on capital therefore being 5·5 per cent.

We may now describe some of the more important irrigation works at present under construction. The greatest of these are the Sukkur (or Lloyd) Barrage in Sind and the Sutlej Valley Project

in the Punjab. The Sukkur Barrage scheme is one of the largest irrigation works in the world. The salient feature of the scheme is a barrage about a mile long across the river Indus, which will be completed in the year 1932, when irrigation will commence by means of seven large canals taking off above the barrage,—four from the left bank and three from the right. The total area affected by this scheme is approximately 8½ million acres, and when it is completed and fully developed, the area annually cultivated in Sind will be practically doubled. Work on the scheme was started in July 1923, and is now far advanced. Of the barrage itself, 16½ spans on the right bank and 22½ spans on the left bank were not far short of completion at the end of the period under review, and work on the remaining 27 spans was going to be undertaken during the working season of 1930. Construction of the seven canal-head regulators on either bank, and of the guide banks, was nearly finished. Of the total estimated quantity of 564·7 crores of cubic feet of earthwork in the main canals, branches, and distributaries, the amount completed by the end of December 1929 was approximately 320 crores; and of the 6,234 miles of canals that are to be constructed under the scheme, about 2,000 miles, consisting chiefly of the largest sections of the main canals and principal branches, had been finished by that date. Considerable progress had also been made with the construction of canal masonry structures, regulators, falls and bridges. The sanctioned estimate of the cost of the scheme is £13·8 millions.

The next great irrigation work in progress is the construction of the Sutlej Valley Project in the Punjab. On both banks of the river Sutlej, that is to say in the British territory to the North and in that of Bahawalpur State to the South, there has been in existence for some time a series of inundation canals which draw their supplies from the river whenever the water is high enough to permit it. These canals are subject to all the drawbacks of irrigation by inundation; there are no weirs at their heads and, in many cases, no means of controlling the volume of water entering them, with the result that, while a supply of water is assured during the rainy months of a normal year, it is liable to serious fluctuations. At times of heavy rainfall the canals frequently suffer grave damage from floods, whereas when rainfall is deficient they may be practically waterless for months on end. It is to remedy this state of affairs that the construction of the Sutlej Valley Project has been

undertaken. When it is completed, the canals will be assured of an ample and well controlled supply of water from April to October, and will, moreover, be capable of extension over the whole of the low-lying area in the river valley. Perennial irrigation will in addition be provided for the uplands on both banks of the river, which at present are entirely unirrigated, and consequently barren, owing to the low rainfall of the locality. The scheme provides for the construction of four weirs, three on the Sutlej, and one on the combined Sutlej and Chenab, with ten main canals taking off from above them. The multiplicity of canals and weirs seems a peculiar feature of the scheme, until it is realized that the project consists of four inter-connected systems, each of the first magnitude. The canals are designed to utilize 48,500 cusecs of water during the hot weather and the monsoon, and 7,000 cusecs during the cold weather. Over 5 million acres will be irrigated, of which 2 millions will be in the Punjab, 2·9 in Bahawalpur and 0·34 million in Bikaner. The immense importance of the project will be realized from the fact that it is estimated that it will bring $3\frac{3}{4}$ million acres of desert waste under cultivation. Three out of the four headworks have now been completed, and eight out of the ten canals provided for under the scheme were in operation during the year 1928-29. The sanctioned estimate of the cost of the project was Rs. 23·86 crores, and the expenditure incurred up to the end of the year 1928-29 was Rs. 17·52 crores, of which the States of Bahawalpur and Bikaner had together contributed Rs. 9·03 crores.

A satisfactory event of the year was the settlement of a problem arising out of the construction of the Sukkur Barrage and the Sutlej Valley Project,—namely how exactly the waters of the Indus and its tributaries should be apportioned between the Punjab and Sind,—which had been engaging the attention of the Government of India and of the Governments of Bombay and the Punjab for some time. The matter was referred for examination to a committee of engineers, consisting of the Consulting Engineer to the Government of India as Chairman, and of the Chief Engineer in Bombay, the Chief Engineer in Sind, and two Chief Engineers from the Punjab as Members; and the Committee sat in Bombay in March 1929 and submitted detailed recommendations upon the various points at issue. The Committee was unanimous in recommending that no further water should be drawn from the main stream of the Indus until gaugings for ten more years were avail-

able, by which time it would be possible to evaluate the effect on the Sukkur Barrage Scheme of the withdrawals contemplated as a result of the construction of the Sutlej Valley Project. It further recommended that the Government of Bombay should agree to the withdrawal by the Government of the Punjab from the tributaries of the Indus of a volume of water not exceeding 1,250 cubic feet a second during the winter months, and suggested that two Superintending Engineers, one appointed by the Government of Bombay and one by the Government of the Punjab, should report on the probable effect on the Sind Inundation Canals of the project for storing flood-water by means of the dam at Bhakra, expressing the hope that, when this report was forthcoming, it would be possible to devise means whereby the work might be undertaken without detriment to existing irrigation. The recommendations of the Committee were accepted by the Governments of India, Bombay, and the Punjab, and action is now being taken accordingly.

Some of the other important irrigation works which have been undertaken or completed in recent years may now be mentioned. In December 1928 the Sarda River irrigation work in the United Provinces were formally put into service. The river Sarda,—or Chauka, as it is called further down its course,—rises in the Himalayas North of Lucknow and flows in a South-Easterly direction, and after joining the river Gogra makes confluence with the Ganges near Chapra. The irrigation works supplied from its waters were originally authorized in two portions, the Sarda Kichha Feeder Project, comprising the head-works and the main canal and Western branches, which was sanctioned in 1919, and the Sarda (Oudh) Canal, comprising the Southern branches, which was sanctioned in 1921. The system as a whole contains some 650 miles of main canal and branches, 3,600 miles of distributaries, and 110 miles of escapes, and will irrigate over 1⅓ million acres, yielding a return of about 7 per cent. on the estimated capital cost of £7 millions.

Another big irrigation work, to which we have already referred, is the construction of the Cauvery Reservoir in the Madras Presidency, at an estimated cost of £5·5 millions. The object of this work is firstly to improve the fluctuating water-supply of the existing system of irrigation extending over more than a million acres of the Cauvery Delta, and secondly to extend irrigation to a new area of 301,000 acres, from which, it is estimated, as much as

150,000 tons of rice will be obtained annually. The essence of the scheme is the construction of a large dam at Mettur, on the Cauvery, to store over 90,000 million cubic feet of water, and of a canal nearly 88 miles long with a connected distributary system. The expenditure incurred on the scheme up to the end of 1929 amounted to £2·3 millions.

Two important irrigation works which have recently been completed in the Deccan also require mention, namely the Bhandardara Dam, which is the highest in India, and the Lloyd Dam at Bhatgar, which is the largest mass of masonry in the world. Irrigation from the great lakes formed by these dams is rapidly being developed in the valleys below them, the Bhandardara Dam supplying the Pravara Canals and the Lloyd Dam the Nira Canals. Irrigation in the Pravara area has grown very rapidly, and lands on these canals which formerly were unproductive, are now covered with valuable sugarcane crops. The Nira Valley Canals, consisting of the new Nira right bank canal and the extension of the Nira left bank canal, will command a total culturable area of about 675,000 acres, and constitute the largest irrigation system in the Deccan. The completion of the great storage works at Bhandardara and at Bhatgar has of course greatly extended the total irrigable area and when fully developed they will be capable of providing irrigation for over 450,000 acres annually.

Almost all the provincial Governments besides those concerned with the schemes we have already described have irrigation projects in preparation, and those which are likely to be completed within a reasonable time will, it is estimated, add over 6 million acres to the irrigated area in the country, whilst by the time the projects now under construction are in full working order, a total of 40 million acres under irrigation is expected. When allowance is made for the natural expansion of existing schemes it is probable that there will be an ultimate area of 50 million acres under irrigation by Government works.

Apart from canals and tanks, wells are, and always will be, a vital factor in Indian irrigation, and in the improvement of these, also, the Government takes an active and increasing interest. During the comparatively short period of their existence the Agricultural Departments have been instrumental in increasing the capacity of thousands of existing wells and in constructing an immense number of new ones. There is great scope for the adop-

tion of more modern methods of lifting water from wells for irrigation purposes, and during the year under review progress was made in the introduction of improved bullock water-lifts,—mainly improved types of Persian wheel,—and in the installation of pumps driven by small oil engines. A fillip to the use of centrifugal pumps for raising water will doubtless be given by the various hydro-electric schemes now coming into operation throughout the country,—though the point must not be overlooked that the discharge capacity of the average masonry well is small and that such wells are easily damaged by over-pumping. The provision of special advice to the *zamindar* is consequently more important than the standardization of plant. In 1929-30, the number of wells bored by the Government was 4,134, of which 3,185 were successful; in the previous year 3,835,—of which 2,692 were successful,—were bored.

We have now seen something of the part which Agriculture and the various activities associated with it plays in the life of the country, and may turn our attention throughout the rest of this Chapter to a brief investigation of the importance and development of Industry. From the figures we have given in the first paragraph, it will be obvious that, as compared with agriculture, the proportion of the population that is engaged in industry must be extremely small. According to the Census of 1921 the percentage of the inhabitants that was then engaged in industry was 10½ per cent.,—a further 1½ per cent. being employed in transport work or mining. But of the 10½ per cent. classed as industrial workers, the great majority were engaged in unorganized industries connected with the supply of personal and household necessities and the simple implements of work, and no more than 1 per cent. of the population was shown as being employed in organized modern industrial concerns. Moreover, even this 1 per cent. is a somewhat inflated total, since it includes persons employed on plantations and grass farms. Thus in order to obtain a figure for the total proportion of industrial workers in India which would be approximately comparable to similar figures for the industrial countries of the West, it would probably be reasonable to take ¾ per cent. of the population as representing the workers actually engaged in organized industries and to add to this the 1½ per cent. relating to transport workers and miners together with a further 3 per cent. drawn from the

group of people engaged in "unorganized" industries,—arriving at a final total of no more than 5¼ per cent. Nevertheless when the total population of a country amounts to the enormous figure of 320 millions, 5¼ per cent. of it represents a substantial number of people; and in point of fact the existence in India of approximately 16,900,000 persons who may be classed as industrial workers has entitled her,—as a result of the memorandum issued from the India office to the Secretary-General of the League of Nations in 1921,—to be listed by the International Labour Organization as one of the eight most important industrial States in the world, and to claim a seat on its governing body.

Another point to be emphasised is the comparative novelty of industrialism in India, and the rapidity of its growth. To take for example the two largest and most important industries which the country contains, we find that whereas in 1880 the numbers of cotton and jute mills throughout the country were 55 and 22 respectively, in 1928 they had risen to 279 and 91; and that during the same period the labour employed in the cotton industry had risen from 40,000 to 319,000 persons, and that in the jute industry from 27,000 to 339,000. Perhaps even more remarkable has been the speed with which more recently established industrial undertakings,—such as modern mining operations, railway and dockyard work, the manufacture of iron and steel, paper, matches, and so forth,—have developed during the last three decades.

Associated partly with this rapid extension of modern industrial activity and partly with the country's social and geographical peculiarities, is the fact that as yet India can scarcely be said to possess an urban proletariat in the sense in which that term is understood in the other great industrial countries of the world. Hitherto there has been no such severance in culture or even in function as has occurred elsewhere between the industrial operatives and the inhabitants of the rural districts from which they have been drawn. The Indian factory hand is generally a purely migratory individual, who visits the towns or industrialized areas at certain seasons,—as for instance during the normally slack periods of agricultural operations, or in times of scarcity or famine, or else for a few years of life only, in order that he may accumulate a little capital; but he has no intention of settling in them perma-

nently, nor does he usually bring his family with him. In consequence he is liable to abandon his job for very trivial reasons, and should he fail to find some alternative occupation in the towns will probably wend his way back to his ancestral village, in which in any case he generally spends a large part of his life as an ordinary cultivator. And the migratory habit of the industrial workers is far from being their only unusual characteristic; they are also bewilderingly heterogeneous. In the large industrial towns are to be found labourers drawn from every part of the country, differing profoundly in race and caste and creed, having widely contrasting standards of living,—as for instance over such questions as the use of a vegetarian or non-vegetarian diet, which naturally makes a substantial difference to a family budget when the annual income per head does not exceed Rs. 100,—and speaking languages and dialects which are often incomprehensible to one another; yet despite their differences finding themselves herded together by day in the indiscriminate uniformity of factory conditions, and spending their leisure moments in the congested tenement houses of the industrial quarter. One of the most conspicuous results of this confusing state of affairs, and the rapidity with which it has developed, has been the deplorable dearth that has hitherto prevailed of accurate statistical knowledge about the details of the country's industrial life, which has proved a grave handicap, both to the State and to employers, in their endeavours to grapple with the problems which inevitably arise from the sudden impact of the forces of modern industrialism upon an unaccustomed environment. It was partly with the object of remedying these deficiencies in knowledge that the Royal Commission on Labour was appointed early in 1929, in circumstances described in our Report last year; and undoubtedly its investigations, which have been in progress during the period under review, will widen the range of ascertained fact substantially, since a large quantity of detailed information was prepared for submission to it which was not previously obtainable. But consideration of this material had best be deferred until the publication of our Report next year, when the final results of the Commissioners' labours will probably be available.

These two fundamental factors, however,—the migratory habits of the industrial population, and their heterogeneity,—obviously account for the great majority of the peculiar problems of Indian

urban life which the Commissioners have under consideration. For example, the extraordinary duration of many of the strikes which have occurred in the industrial areas during recent years,—and, as we saw in Chapter I, during the year under review also,—has certainly been in part due to the fact that the strikers were not solely dependent upon earning town wages, and those who did not actually return to their village to resume their traditional occupations were at least in the majority of cases fortified by the knowledge that they could do so if they wished. Similarly the comparative weakness of Trades Unionism in India has been largely due to the fact that there is generally speaking no static urban proletariat upon which those organizations can be based, and that consequently the leaders of the Trades Unions, who in any case are largely drawn from the literate classes, have comparatively little hold over the uneducated and impermanent Union members. Moreover, the naturally low output of the average Indian industrial labourer,—which in part is due to the traditional and climatic causes which we have seen to be also responsible for the poor productivity of the ryot,—is aggravated by the fact that he cannot be relied upon to stay in the same place for any determinable length of time; and undoubtedly the speed and extent of the labour turnover in the important industrial areas in a serious handicap to the country's economic development. Again, the fluidity and transcience of the urban population is responsible for abnormalities in the statistics of population in the larger cities of India which are probably unparalleled in any other part of the world, and have given rise to social problems of great complexity. The Census Report for 1921, for example, showed that of the total population of Bombay, only 16 per cent. had been born in the city, and that males outnumbered females in the proportion of 1,000 to 524; similarly, less than 25 per cent. of the inhabitants of Calcutta and its suburbs had been born there, and the sex ratio was as low as 470 females to every 1,000 males; while in Rangoon the corresponding figure for females was only 444. It will readily be understood that facts such as those necessarily give rise to a multitude of intricate problems of profound human importance. On the other hand the migratory habit of the workers has at least one practical advantage, in that it renders the problem of unemployment much less acute and intractable in India than it is in the industrial States of the West,—though here again the

absence of statistical data prevents our reinforcing this statement with detailed facts and figures. But broadly speaking it would be true to say that while unemployment does indeed occur sporadically in India among particular classes of the industrial population, all the labour available can normally be absorbed, and frequently the problem is not so much to find work for the workless as to find workers for the work. Moreover such unemployment as is found in Indian industrial areas often arises not from causes inherent in the industries themselves, but from totally extraneous factors such as crop-failure in the surrounding rural districts, as a result of which an exceptional quantity of agricultural labour for which no use can be found flows into the towns, and congests an industrial employment market already recruited from rural sources,—although the danger of this occurring on a really large and embarrassing scale is considerably reduced by the unique and elaborate system of famine relief which the administration has established. When we talk of unemployment in India, what we usually have in mind is not unemployment amongst the artisans and manual labourers of the towns at all, but unemployment amongst the educated middle classes, and there is no doubt that this constitutes a dangerous and deplorable problem whose gravity is steadily increasing. But it is not relevant to this context.

This brief summary will have been sufficient to indicate the exceptional complexity of industrial problems in India, and the magnitude of the difficulties with which the Government is confronted in its endeavours to ameliorate the condition of the urban workers. Admittedly the state of the labouring classes in the large industrial towns such as Calcutta, Bombay, Madras, Rangoon, Ahmedabad, and Cawnpore is in many ways very unsatisfactory, and there is as yet a great deal to be done in such matters as the provision of an adequate industrial medical service, proper sanitary arrangements, bathing facilities, canteens, cloakrooms, schools for juveniles, *crêches* for the children of female employees, workmen's insurance, and labour exchanges, before it can be said that the condition of the industrial operatives in India is comparable to that to which similar classes in the more advanced and powerful States of Europe and America have become accustomed during the last two generations. But, from the very nature of the difficulties to which we have drawn attention, this is inevitable. Moreover, there

are other factors quite apart from the two fundamental problems we have mentioned which should be borne in mind. It must not be forgotten that the introduction of modern industrial activity into sub-tropical climates is still in an experimental stage, and has given rise to peculiar troubles towards whose solution the experience of the industrialized States of the West is of no assistance. There is also the ignorance and apathy of the poorer classes in India to be contended with; if the impulse towards improved conditions on the part of those primarily concerned is deficient, then obviously even the most far-reaching and radical experiments in amelioration, either on the part of the Government or of private organizations, must be gravely handicapped. Again, there is the fact that female labour is often employed in Indian industrial concerns; and in a country where child-marriage is prevalent and voluntary spinsterhood very unusual, the results of this state of affairs, from the point of view of maternal and infant mortality or debilitation, are necessarily grave. Strenuous efforts have recently been made to deal with the problem, as we shall shortly see, but since the coal-mines of Bengal, Bihar and Orissa, and the Central Provinces alone employ 50,000 women, who constitute about 19 per cent. of the total labour force, it will be readily understood that the problem is one which admits of no immediate solution. Yet another factor which considerably handicaps such efforts as are made to improve the condition of the industrial workers is the system whereby they are recruited. In many towns it has become customary for aspirants for industrial employment who are newly arrived from the country to put themselves in the hands of "jobbers", who undertake to secure them work on the condition that they receive a commission on the wages received and are empowered to extract fines for recalcitrant behaviour; and this arrangement gives rise to a multitude of social and economic evils which can be readily imagined.

In the face of these manifold difficulties, the improvements which have already been effected in the circumstances of the industrial workers, as a result of the activities of the Government, of employers, and of private philanthropic organizations, are very creditable. Within the sphere of private enterprise a substantial amount of really valuable work has already been achieved, and there is no doubt that its scope and efficacy, (if we exclude the periods during

which reformist energies are diverted into the less profitable channels of political agitation), is steadily increasing. In cities where Improvement Trusts exist, a good deal of attention is being devoted to the provision of better homes for the workers, and employers are also realizing the practical advantages of undertaking housing schemes; in several of the large commercial centres both Indian and European firms have set a high and honourable example in the care which they devote to the conditions under which their employees live. Appreciable progress has also been achieved during the last decade in the provision of *crêches* for children and of women doctors to safeguard the health of female workers. In all large industrial centres there is a growing interest on the part of the general public in the health of the operatives, and organizations such as the Servants of India, and the Poona Seva Sedan Society, are rendering valuable service by focussing public attention on such questions as housing, food supply, indebtedness, medical aid, educational facilities and so forth. These activities have been energetically supported by the State in many ways,—especially, of course, by the system of inspections instituted under the Mines and Factories Acts,—and have been supplemented by a number of enquiries, as for example, those undertaken by the Royal Commission on Labour, by organizations such as the Bombay Labour Office, by various specialist bodies which have been investigating problems like that of the ventilation of cotton mills, and by the Board of Conciliation and the Court of Enquiry which were set up during the year under the Trades Disputes Act, whose activities we shall shortly describe. But naturally the most important aspect of the Government's activity on behalf of labour is not so much enquiry as legislative action; and here it has had the advantage of being able to make use to considerable extent of the experience of Great Britain and other countries in which industrialization developed earlier; in consequence the last two generations have witnessed the passage of a large number of wisely framed and effective measures, such as the Factories Acts in 1881, 1891, 1911, 1922, and 1926, the Mines Acts of 1901 and 1923, the Workmen's Compensation Act of 1923, the Trade Unions Act of 1926, the Trades Disputes Act of 1929, and the Maternity Benefits Acts passed in the Bombay Presidency and the Central Provinces in 1929 and 1930, respec-

tively,—which together constitute an admirable legislative achievement.

Among a number of other reforms effected under the Factories Acts, provision has been made for the introduction of a regularized 60-hour week, the raising of the minimum age of children employees from 9 to 12, a considerable widening of the official definition of the word "factory", and a complete prohibition of night work for women and children. The latest report on the working of the Act covers the year 1928. During that period small increases occurred in the number of factories in all the Provinces and administrations with the exception of Baluchistan, and the total rose from 7,515 to 7,865. The factory population showed a slight decrease, the total average daily number of operatives having been 1,520,315, as against 1,533,382 in 1927. The fall was mainly due to the mill strike in Bombay, which lasted six months. There were also decreases in Assam, Bihar and Orissa, the United Provinces, and Ajmer-Merwara, the first being attributed to a reduction in the number of children employed in tea factories. The remaining Provinces all experienced increases. The total number of women employed in factories decreased slightly to 352,933, and some of the provincial increases, such as that of Bengal, were partly ascribed to greater employment of labour over 13 years of age instead of children. The Bombay report indicated that the irregular employment of women in Sind had been considerably reduced by the surprise visits and prosecutions recently instituted; but on the other hand it is recorded in the Burma report that cases of illegal employment of women at night had been detected and that this irregularity had not been so effectively stamped out as was thought. The number of children employed in factories fell from 57,562 in 1927 to 50,911 in 1928. Excepting the Punjab, all the Provinces shared in this satisfactory decrease, which was generally ascribed to a growing preference for adult labour owing to the rigid enforcement of the provisions of the Act concerning juvenile employment. The action taken in the Bombay Presidency had led to an almost complete cessation of the irregular employment of children in the Ahmedabad mills, which some years before was rife. The Bengal report states that although the abuse of child labour had steadily decreased it was still prevalent, and suggests that the evil cannot be entirely eradicated until some form of compulsory pri-

mary education is introduced. As regards the length of the working week, out of every 100 factories employing men, in 28 the men worked for 48 hours or less per week, in 13 for more than 48 hours but less than 55 hours, while in 59 the hours amounted to 55 or more; and out of every 100 factories employing women, in 30 the women's working hours were limited to 48 hours or less per week, in 14 the hours were between 48 and 55, and in 56 they amounted to 55 or more. Thirty-four per cent. of the factories employing children fixed their maximum hours at not more than 50 per week. The number of exemptions from certain sections of the Act increased slightly during the year, largely as a result of the fact that it became necessary to grant short-term exemptions to cotton-ginning factories in the Punjab. The total number of accidents recorded rose to 16,342 as against 15,711 in 1927; the increase was, however, mostly due to minor accidents which accounted for 524 out of the total of 637. In the Central Provinces and Berar, where the total number of accidents rose from 293 in 1927 to 337 in 1928, it is stated that the increase was largely attributable to greater knowledge of the provisions of the Workmen's Compensation Act on the part of the operatives, and that injuries of the most trivial nature such as cuts and bruises had been freely reported during the period under review. The important matter of providing fencing for dangerous machinery received a considerable amount of attention during the year, and the provincial reports indicate that the improvements effected were satisfactory. Perceptible progress was also made in housing and sanitation in Madras; 20 factories, in addition to the 191 that had already done so, embarked on schemes for providing housing accommodation for their employees; and improvement in sanitation was reported from Bombay and Bengal. An interesting step towards ensuring healthy conditions of work in new factories was made in the United Provinces, where the Government issued model bye-laws to be adopted by the municipal and district boards. Marked improvement took place during the year in the ventilation and lighting of factories, particularly in the Bombay Presidency; the six new spinning and weaving mills in Ahmedabad which were about to be opened at the end of the period were provided with ventilating and cooling arrangements costing Rs. 7,34,000, and 37 of the old mills in the city had recently spent no less than Rs. 9,97,000 on improvements in ventilation; in Sholapur, also,

considerable activity had been displayed, and Rs. 3,00,000 had been expended on similar facilities by four mills alone. These gratifying developments had undoubtedly been stimulated by the inquiry initiated by the Government some years before into the problem of ventilation and humidification in cotton mills. Substantial improvements in ventilation, cooling, and lighting were also reported from the United Provinces, the Central Provinces, Bihar and Orissa, and Bengal, during the year. On the other hand, the development of welfare work was somewhat slow. In Bombay, the prolonged strike upset the *crêche* arrangements in the mills and much of the work of past years had to be begun again; nevertheless at the end of the year there were two more mill *crêches* in operation than there had been in December 1927. Amongst the various activities undertaken by the mill-owners of Bombay for the improvement of the workers' welfare, perhaps the most interesting was the loan, at a low rate of interest, of Rs. 14,000 to employees desirous of drawing earned wages before the stipulated pay-day,—the interest earned being utilized for welfare work. In Bengal the most striking development was the opening of an eye-dispensary by the Kelvin Jute Mill, which will serve the whole of the Titaghur District. An interesting innovation also occurred in the Punjab, at the Egerton Woollen Mills, Dhariwal, which started a sports club for its employees. The total number of factories inspected during the year rose to 7,093, as compared with 6,692 in 1927, and the ratio of the number of factories inspected to the total number of factories rose from 69 to 90 per cent. Assam continued to contain the largest number of uninspected factories. The convictions obtained during the year for breaches of the Factories Act amounted to 1,348, and the number of persons convicted to 419, as against figures of 1,420 and 432 respectively in 1927; the decrease was chiefly accounted for by a marked reduction in the total for Madras. The Bengal report indicates that disregard for the Act remained prevalent. Comment continued to be made in most of the reports on the inadequacy of the fines imposed by magistrates for breaches of the Act; in the Punjab over-working of labour was one of the chief offences under the Act, and it is indicated that an unscrupulous factory occupier often found it less profitable to obey the law in this matter than to break it and pay the small fine which was usually imposed.

The chief reforms introduced into the new Mines Act of 1923 were the prohibition of the employment of children under 13 years of age and of their presence below ground; the restriction of the hours of labour of adults to 60 hours a week above ground and 54 hours below ground; and the prescription of a weekly day of rest. The Act, however, had the defect that it imposed no limit on the hours during which a minor might work in any one day; and in some mines a system was in force whereby workers were encouraged to spend long hours underground, with the result that effective supervision was handicapped, the number of accidents was increased, and the efficiency of the men reduced. An Amending Act was accordingly passed in 1928, imposing restrictions on the daily hours of work and arranging for the introduction of a system of shifts; and the main provisions of this measure were brought into force on the 7th of April 1930. Another development which occurred since the passage of the Act of 1923, and which we described in our Report last year, was the issue of regulations, operating as from the 1st of July 1929, which totally prohibited the employment of women underground in all mines in British India except the coal mines of Bengal, Bihar and Orissa, and the Central Provinces, and the salt mines of the Punjab. In these mines, which employ a large number of women, immediate prohibition would have caused serious industrial dislocation, but it was provided that the number of women employed underground in them shall be reduced by definite stages to *nil* during a period of 10 years. The latest report of the Chief Inspector of Mines covers the year 1928, and shows that during that period the daily average number of persons employed in mines was 257,671, as compared with 209,290 in the previous year. Of these persons 117,940 worked underground, 79,458 in open workings, and 70,275 on the surface; 189,590 were males, and 78,081 females. The number of people employed in coal mines was 164,139 as against a total of 165,213 in the previous year; of these 36,427 were females, employed chiefly as loaders. The actual number of women working underground was 31,785. The number of persons employed in metalliferous mines, including mica, stone, clay, and salt mines, was 103,532, which was 545 less than the number employed in 1927; 75,323 were males and the rest females, of whom only 3,377 worked underground. During the year there were 221 fatal accidents, which is 12 more than in 1927 and 6 more

than the average number for the preceding five years; these accidents caused the loss of 259 lives, as against 247 in the preceding year; of the persons killed, 210 were males and 49 females. In addition there were 654 serious accidents involving injuries to 683 persons, as compared with 650 serious accidents involving injuries to 713 persons in 1927.

Despite the peculiar difficulties of applying such a measure to Indian industrial conditions,—such as shortage of qualified medical men, the migratory propensities of the workers, and their inability to undertake expensive litigation,—the Workmen's Compensation Act of 1928 was a comprehensive piece of legislation, and included within its scope practically all the employees in factories, mines and railways, besides a number of other workers. During the year 1928, the number of cases coming within the purview of Statement I of the Act amounted to 16,768, as compared with 15,216 during the previous year, but the amount of compensation paid declined from Rs. 11,11,254 to Rs. 10,95,730. The report on the working of the Act during the period states that there are definite indications that its provisions are becoming more and more widely known, although there inevitably remain many employees who are ignorant of it. It is, however, remarked that there has been no great improvement in the matter of obtaining satisfactory returns from employers, with the possible exception of Madras; in Bombay only about 78 per cent. of the employers concerned submitted returns; the attitude of employers towards claims made by their employees is also stated to be not uniformly generous. Delay occurred in some places in disposing of claims under the Act owing to the fact that relatives of deceased workmen could not be easily traced. On the whole, however, no difficulty of serious importance was experienced in the administration of the Act during the year. A small non-controversial measure known as the Workmen's Compensation (Amendment) Act, 1929, received the assent of the Governor-General in March of that year, but the Government does not propose to initiate further changes until after the publication of the Report of the Royal Commission on Labour.

Trade Unionism in India is of very recent growth, since its history can scarcely be traced back earlier than 1918. During the following four years, however, the movement derived remarkable impetus from the distress in which the industrial workers were

plunged by the failure of the wage-level to keep pace with the rise in the price-level, and during this period strikes were numerous, bitter, and prolonged; but owing to the peculiar characteristics of Indian urban labour, the Trade Unions which were formed in connection with them as a rule failed to extend their activities beyond what would be expected of militant strike committees, and many of them disintegrated entirely after the settlement of the dispute from which they had originated. The results of this state of affairs were very confusing and unsatisfactory to the Government, to employers, and to workmen alike, and accordingly a Bill designed to provide for the protection and registration of Trade Unions was drafted in 1924, and subsequently passed in the form of the Trade Union Act, 1926. This Act offers to all *bonâ fide* Trade Unions the opportunity of registration, which involves certain liabilities and confers certain privileges. On the one hand registered Unions are required to frame and supply rules on certain matters, to have their accounts audited, to compose their executive of persons at least 50 per cent. of whom are actually engaged or employed in the industry concerned, and to confine expenditure to certain specified objects; on the other hand the officers and members of the Unions obtain protection from liability for breaches of contract in connection with acts done in furtherance of trade disputes, and for certain tortious acts of their agents, and the officers are in some respects rendered immune from prosecution for criminal conspiracy. Although it is obviously too early to pass final judgment on the matter, it would be true in general to say that considering the peculiar difficulties with which Trade Unionism is faced in India, the Act has proved successful; and the number of Unions that had been registered under it prior to the 1st of April 1929 amounted to 78 and their aggregate membership to 181,577. During the year under review the most important event which took place in the Trade Union world was the split which occurred at the meeting of the All-India Trade Union Congress, which was held at Nagpur in November and December 1929, between those members who favoured the institution of a boycott of the Royal Commission on Labour and those who did not. The result of this cleavage of opinion was the creation of a new body, known as the All-India Trade Union Federation, in opposition to the Congress.

The origin of the Trades Disputes Act of 1929 was discussed in some detail in our Report last year. The object of this piece of

legislation was the provision of machinery for preventing and settling industrial troubles, in the shape of Courts of Enquiry and Boards of Conciliation, the function of the former being to investigate and report on such questions connected with disputes as might be referred to them, and of the latter to negotiate and if possible effect a settlement,—while both, it is hoped, should enable public opinion to be mobilized in such a way as to prevent or shorten the disputes that arise. During the year under review this machinery was put into operation on two occasions only,—which we have already mentioned,—the one being the establishment of a Court of Inquiry by the Government of Bombay on the 3rd of July, to enquire into the dispute between the employers and the workmen in the Bombay textile industry, and the other the appointment of a Board of Conciliation by the Governor-General in Council, to deal with the dispute between the Agent of the Bombay, Baroda and Central India Railway, and the employees' union, concerning the terms under which certain employees were being transferred from the railway workshops at Parel to the new workshops at Dohad. The reports of both these bodies are certainly valuable documents, but at this early stage in the working of the Act it is scarcely possible to say how effective it is likely to be in reducing or preventing industrial disputes.

Apart from the Trades Disputes Act, no important legislation on industrial matters was undertaken or effected during the year. Certain proposals for minor amendments, both in the Trades Disputes Act and the Trade Unions Act, were made by the Government of Bombay as a result of the recommendations of the Court of Inquiry, and at the conclusion of the year these were under the consideration of the Government of India. Mention may also be made of a Bill which was introduced into the Legislative Assembly in September 1928, to amend the Indian Patents and Designs Act of 1911. The Bill was based partly on the revision of the English Law undertaken in 1919 and partly on the experience gained in India on the working of the Act of 1911, and has been passed into

One further feature of Indian industrial life requires mention, and that is its international implications. As a member of the League of Nations and of the International Labour Organization, India has had to consider and take action upon various Draft Conventions and Recommendations affecting labour, which have

substantially influenced the shaping of such pieces of legislation as the Factories Act, the Workmen's Compensation Act and the Mines Act; and the international aspect of labour questions seems bound to assume an increasing importance as the years pass. During the year under review various matters of this kind came up for consideration. It will be recalled that mention has been made in our two previous Reports of the fact that the Draft Convention adopted by the Tenth International Labour Conference on the question of introducing a scheme of sickness insurance has been under examination by the Government of India, and that provincial Governments had been required in 1928 to give their views on the matter, and that their replies had been received. During 1929, however, the subject remained in abeyance, since it was felt desirable to await the publication of the report of the Royal Commission on Labour before taking definite action.

Mention was made in our Report last year of the Draft Convention and Recommendation adopted by the Eleventh International Labour Conference on the subject of minimum wage-fixing machinery, and of the fact that at that date the question whether India should ratify the Convention was undecided. Under Article 405 of the Treaty of Versailles the Draft Conventions and Recommendations of the International Labour Conference are to be brought before "the authority or authorities within whose competence the matter lies, for the enactment of legislation or other action"; and as the ratification of the Convention and the acceptance of the Recommendation involves new legislation, the competent authority for the purpose in the Indian Legislature. The Draft Convention and Recommendation were accordingly placed before the Council of State and the Legislative Assembly on the 24th and 26th September 1929, respectively, in the form of a resolution recommending to the Governor-General in Council that ratification of the Convention or acceptance of the Recommendation should not be effected. The resolution was adopted by the Council of State on the 26th September 1929 and by the Legislative Assembly on the 20th January 1930; it was, however, slightly amended by the Assembly in order that it might be made clear that the decision was not final, and that the question would be reconsidered in the light of the recommendations of the Royal Commission on Labour.

The Twelfth Session of the International Labour Conference which was held at Geneva in May and June 1929 adopted, *inter alia,* recommendations concerning the prevention of industrial accidents, and the responsibility for the protection of power-driven machinery. The report of the Delegates of the Government of India to the Conference and the texts of the Recommendations adopted have been published. On the 10th March 1930 the Recommendations were placed before the Council of State, and the House adopted a resolution to the effect that the Governor-General in Council should be asked to examine the possibility of giving effect to the Recommendations concerning the prevention of industrial accidents, and that the results of this examination should be placed before the Council within eighteen months. The Recommendations were placed before the Legislative Assembly by means of a resolution in similar terms moved in that Chamber on the 31st of March, but the House decided to postpone consideration of it till the next Simla Session.

The Thirteenth (Maritime) Session of the International Labour Conference which was held at Geneva in October 1929, had under discussion the regulation of hours of work on board ship, the protection of seamen in case of sickness, the promotion of seamen's welfare in port, and the establishment by each maritime country of a minimum requirement of professional capacity in the case of captains, navigating and engineer officers in charge of watches on board merchant ships,—but final decisions on these matters were not reached.

CHAPTER V.

Communications.

Opinions may differ concerning the extent to which indications of "progress" are to be found in some of our previous Chapters. In certain quarters, for example, it is denied that the politics which the introduction of the new democratic institutions and ideals from the West had evoked, may be considered "progressive" in the sense of representing a development which is natural and congenial to India, or likely to bring happiness and prosperity to her inhabitants in the future. Again, there are those who argue that the industrialization of India,—the development of cotton mills, mines, iron works and so forth, and the consequent growth of an urban proletariat,—is to be deplored rather than commended, since it is introducing into the country forces which in Europe and America have created a whole train of unsolved social problems of extraordinary complexity. But as regards the development of modern means of communication there is not the same scope for dispute. From the material point of view alone, the achievement of those responsible for the creation of India's railway system, her posts and telegraphs, roads and shipping, is of course extremely impressive, and by facilitating famine relief, creating markets, and providing employment, these agencies have undeniably brought many practical benefits to the people of this country. For the philosophical student of human affairs, however, this is not so important as the far-reaching "moral" or cultural revolution which they are effecting throughout India, by widening the range of interests and opportunities amongst all classes, and bringing the hundreds of thousands of isolated village communities, where the typical rural civilisation of India has been maintained unmodified for centuries, into some sort of contact with the affairs of the rest of the world. Thus from the psychological, even more than the material point of view, the spread of modern transport and communications over the surface of the sub-continent is an event of immense significance, since it is giving this country a coherence which hitherto it has lacked, and by knitting it into a comparatively homogeneous administrative whole is enabling the formerly elusive ideal of a united India to come within the range of realisation.

Of the various means of transport available, the railways,—owing to the country's vast size,—are of course by far the most important, and the active policy of development which has been and still is being pursued by those responsible for them must inevitably exercise a profound influence upon India's economic and cultural development. In Chapter VII will be found an account of the financial position of the railways during the year under review, and here we will concern ourselves with general administrative questions only. At the outset, for the benefit of such readers as are unfamiliar with Indian affairs, it is desirable to explain that the methods of railway administration in this country and in Great Britain are radically different, since no less than 75 per cent. of the route mileage of Indian railways is owned and 47 per cent. is directly managed by the State. The control, financing, and development of the railways therefore falls largely on the Central Government, which acts in these matters through the body known as the Railway Board. As now constituted, the Board consists of the Chief Commissioner, a Financial Commissioner and three other Members, and is assisted by five Directors expert in civil engineering, mechanical engineering, traffic, finance, and labour, whose functions are to relieve the Board itself of routine work, by disposing of all detailed or technical matters themselves, and thus to enable it to concentrate its attention on the larger questions of policy. This arrangement,—except for the fact that posts for one new Member and one new Director were created in 1929,—dates from 1924, when,—as a result of the recommendations of the Acworth Committee,—considerable changes were made not only in the railway finances, but also in the composition and functions of the Railway Board and the administrative organization as a whole. For some time prior to that date it had been apparent that the increase in railway mileage and the growing complexity of traffic problems under modern conditions would necessitate some changes, since the burden of work thrown on the staff of the larger railways by the "departmental" system of administration then existing had become so heavy as to militate against efficiency. Investigation indicated that the remedy lay in adopting an arrangement which had been applied with success in other regions such as South Africa and parts of America where railways are also spread over vast areas. The main object of this new "divisional" system, as it is called, is to fix entire responsibility

for the working of any one section of line on a single officer. The "divisions" administered by these officers naturally vary considerably in magnitude according to circumstances, but as a rule are a good deal larger than the old railway "districts", each of which used to be controlled by three or more officers individually responsible to different departmental chiefs at railway headquarters. Under the new system, on the other hand, officers in charge of the "division", who themselves have wider powers than any that were exercised by the administrative officers in the old days, are directly responsible not to heads of departments, but to the "Agent" or administrative head of the whole railway. Thus responsibility under the divisional system is very much more centralized, and the danger of an overlapping of functions is reduced.

A glance at the map opposite will give some indication of the extent of railway development in India within comparatively recent times. In 1872 the total railway mileage in India was a little over 5,300. By the end of March 1930, it was approximately 41,724, which is nearly double that of the United Kingdom. Considering how vastly greater India is than the United Kingdom this may not at first seem a very impressive comparison, but it must be remembered that this country contains immense areas of mountain and desert and swamp over which population is sparse and railway construction almost impossible, whereas practically the whole of the United Kingdom is geographically accessible and in some way productive; and the fact that in India within under 60 years nearly 36,500 miles of railway have been constructed, often under extraordinarily difficult conditions, is at least indicative of enterprise on the part of the State and the companies concerned. Moreover the efficiency and comfort of India's long distance railway services is probably unsurpassed in any other part of the world. As regards the future, the quotations given in Chapter VII from the speech made by the Commerce Member in presenting the last Railway Budget to the Assembly, will demonstrate that although a considerable reduction has had to be made, owing to the general financial stringency, in the expenditure to be devoted to new construction, the work sanctioned, in progress, or completed during the period under review was nevertheless substantial. The number of new lines sanctioned during the year was five, of which two, whose total length will

INDIAN RAILWAYS IN 1872.

Total Railway Mileage....5,369.

INDIAN RAILWAYS IN 1930

Total Railway Mileage.....41,724

INDIA

be 145.5 miles, have already been started, while work on the remaining three, amounting to 82·27 miles, will shortly be begun. 812·07 miles of new railway were opened to public traffic during the 12 months ending on the 1st of April 1930, and the total mileage under construction at that date was approximately 2,420.

Most of these new lines are small branches or feeders, and indeed the most striking feature of the Railway Board's programme is the absence of ambitious projects of trunk line construction. This is due to the fact that India is already well served by trunk lines which, like the telegraph system, are based on a scheme outlined by Lord Dalhousie over 70 years ago. He conceived the idea of a system of great trans-Indian routes linking the interior of each Presidency with its outlying parts and the different Presidencies with each other, and including lines from Calcutta to Lahore, from Bombay to the North-West of India, from Madras to Bombay, and from Madras to the Malabar Coast; and these now form the skeleton to which have been appended the numerous subsidiary lines which cover the country. There are however a few gaps in the original skeleton which for one reason or another have remained unfilled. Work on two of the smaller gaps, namely the Central India Coalfield's Railway,—which will cross the space lying between the East Indian and Bengal-Nagpur Railways in Chota Nagpur and the Central Provinces,—and the Raipur-Parvatipuram Railway,—which will complete the link between the Central Provinces and the East Coast,—is now far advanced; only 14 miles of the sanctioned portion of the Central India Coalfield's Railway remain to be opened, the remainder being now in use,* while the Raipur-Parvatipuram Railway is expected to be completed in 1931-32, a considerable length of line having been opened to traffic during the year under review. A third gap was recently filled by the Kazipet-Bellarshah Railway, built by H. E. H. the Nizam's Government, which was opened to traffic in November 1928. Before the skeleton can be said to be theoretically quite complete, however, there are two or possibly three other trunk lines which would need to be constructed, but hitherto they have not appeared likely to be financially justified. One of these is the Bombay-Sind connection, and another is a broad gauge line between Karachi and the United Provinces. The former, because it is to some extent

* Sanction for an additional 155 miles however has yet to be obtained.

short-circuited by an easy sea-route, has hitherto not been considered a promising commercial undertaking, but it is believed that its construction will become necessary and will prove remunerative as soon as the extensive irrigation operations in Sind cause an increase in production and population. The broad gauge connection between Karachi and the United Provinces is, similarly, at present unjustified, owing to the fact that a metre gauge connection already exists, and is not seriously overstressed with traffic. The third trunk line which has from time to time been projected is the connection between India and Burma. Of the three possible routes, that *viâ* Akyab seems the most practicable, but, in its entirety, it would not at present prove remunerative; a start is however being made with a short branch 25 miles long between Chittagong and Dohazari.

This being the position as regards the main trunk lines, the Government,—as we have indicated,—is devoting its attention primarily to filling in the interstices of the main network with useful branches and feeders, which will bring the benefits of railway service nearer the doors of the rural population and enable produce to be conveniently moved and marketed. In view of the fact that nearly 90 per cent. of the population of the country is devoted to agricultural pursuits this policy is obviously sound.

In addition to the construction of new lines, several important works have been in progress during the year under review. In last year's Report reference was made to the electrification of certain sections of the Great Indian Peninsula, and the Bombay, Baroda and Central India Railways, which was intended mainly to relieve the congestion of traffic in the thickly populated areas in and around Bombay. These schemes have now been completed, and a similar one, designed to prevent congestion on the section of the South Indian Railway serving Madras, has been sanctioned. The year was also distinguished by the extension of electric traction from suburban to main lines, since a section of main line between Bombay and Poona, on the Great Indian Peninsula Railway, was formally opened to the new electric service on the 5th of November, this being the first length of main line track to be electrified in India. The section between Kalyan and Igatpuri is to be electrified shortly, and when this is done the Great Indian Peninsula Railway will have the greatest length of electrified main line in the Empire. Amongst other important

works undertaken during the year may be mentioned the provision of additional tracks and improved facilities on the Madras sub-urban section of the South Indian Railway, including certain overbridges for road traffic, the construction of bridges over the Irrawaddy at Sagaing and over the Indus at Kalabagh, and the doubling of the Rupnarain bridge on the Bengal Nagpur Railway. Progress was well maintained during the year in the programme of remodelling or altering railway workshops on lines generally approved by the expert committee presided over by Sir Vincent Raven, to which reference was made in previous Reports. The main works sanctioned during the year were the remodelling of the Lillooah workshops on the East Indian Railway so as to provide an up-to-date carriage-body building shop for the State-worked railways, the provision of a repair shop at Bhusawal, on the Great Indian Peninsula Railway, and the provision of modern machinery in the remodelled workshops for the Eastern Bengal Railway at Kancharapara. Considerable activity also took place during the year in connection with the provision of new locomotives and rolling stock; 152 new standard locomotives were ordered, and in addition orders were placed for the manufacture in India of 751 underframes and 2,300 goods wagons. Another matter which has engaged the attention of the Railway Board for some time past that deserves mention, is the question of increasing the use of electric light and power in railway stations and yards. In 1926 a committee of electrical engineers of some of the principal railway administrations was convened to consider and report on the best method of lighting large railway areas and minor railway stations, and after considering this committee's report, the Railway Board suggested that the railway administrations should undertake further experiments on the subject and should give particular attention to lighting problems when preparing yard designs; at the same time they issued orders for the institution of trials at some minor stations on the East Indian and North Western Railways with steam driven and internal combustion generating sets. The reports on these trials have furnished valuable data for comparing costs and have indicated the lines along which progress can most satisfactorily be made. It has already become evident that while the installation of steam driven plant at small railway stations might prove, as a rule, uneconomical, oil engines, on the other hand, are comparatively inexpensive to run and are reliable.

Apart from all these special activities, the Railway Board and the Agents of the different railways have been devoting an increasing amount of attention and of funds, during recent years, to general improvements in open-line facilities, and large sums have been expended on renewing rails and sleepers, re-modelling station yards and marshalling yards, and providing better facilities for the comfort of lower class passengers, especially in such matters as water-supply, waiting and refreshment rooms, booking-hall arrangements, and improvements in coaching stock.

An important event during the period under review was the purchase by the Government on the 1st of January 1930 of the Southern Punjab Railway on the expiry of the contract with the owning company. The acquisition of this system, which includes the lines from Delhi to Samasta, from Ludhiana to McLeodganj, from Jullunder to Ferozepur, and from Kasur to Lodhran, together with a few short branches, and whose aggregate length is about 927 miles, cost approximately Rs. 7 crores; and apart from the administrative advantages arising out of the purchase, it is estimated that it will result in an increase of some Rs. 47 lakhs in the net annual revenue to Government.

Another important acquisition during the year was that of some lines in the Madras Presidency which were previously owned by District Boards. The question of acquiring these railways first arose out of the Government's programme of new construction in Southern India, which involved the conversion of several of them into lines of through communication; and negotiations on the subject had been taking place with the District Boards since 1925. It was recognized that the railway systems in Southern India were under an obligation to the Boards for raising the funds by means of which these lines had been constructed, and special terms were therefore offered to them, whereby the capital involved would be merged in that of the South Indian Railway Company and would rank for dividends *pari passu* with the Secretary of State's capital and the ordinary capital of the South Indian Railway. In the case of the Salem Suramangalam Railway, which was earning considerably higher dividends than the South Indian Railway, it was also provided that the capital to be brought into the accounts of the South Indian Railway as the capital of the District Board, would be an amount representing the capital expenditure on the line *plus* an amount sufficient to yield the District

Board the same return as it obtained in the last year before the transfer of ownership. These terms having been accepted by the District Boards of Salem and Tanjore, the ownership of the Salem Suramangalam Railway and of the Tanjore District Board Railway was transferred to the Government of India with effect from the 1st of April 1928, and the 1st of April 1929, respectively.

In previous Reports references have been made to the work that is being done by local Advisory Committees on railways in bringing to the notice of their respective railway administrations matters affecting the general public. These committees have now been established and are functioning on all Class I Railways, except the Jodhpur Railway. During the course of the year an Advisory Committee for the Barsi Light Railway was established. The committees have already proved themselves a valuable link between the railway administrations and the public, and the interest taken in their work, and the value attached to their influence, has been amply demonstrated by the number of applications received from trade associations and other organizations asking for representation upon them. Some of these requests, of course, have had to be refused, since the usefulness of the committees would be impaired if their composition became unwieldy. Demands for the publication of a summary showing the work done by these committees were made during the debates on the Railway Budget both in 1928 and 1929, and accordingly a pamphlet showing those recommendations of the committees which had been accepted, with or without modification, by the railway administrations, and those which, for various reasons, had been refused, was issued to Members of the Legislature before the Debate on the Railway Budget in February 1930; and similar pamphlets have been issued for each succeeding quarter and made available for sale. The total number of meetings held by these Advisory Committees,—excepting the committee on H. E. H. the Nizam's State Railway,—throughout India during the year was 122, and perusal of the indexes of the pamphlets that are now being issued indicates the wide variety of subjects with which the committees have been dealing, amongst which are such matters as the prevention of the beggar nuisance at stations, the opening of book-stalls, the detention to traffic on level crossings, accommodation for female passengers, facilities for unloading goods traffic, the provision of train indicators, the lighting of road bridges, overbridges and waiting

halls, the display of porters' tariffs, the provision of warning bells in Indian refreshment rooms, and of servants' compartments in upper class stock, changes in the names of stations, the issue of platform tickets, improvements in design of coaching stock, and the provision of special coaches for vendors of fruit and vegetables.

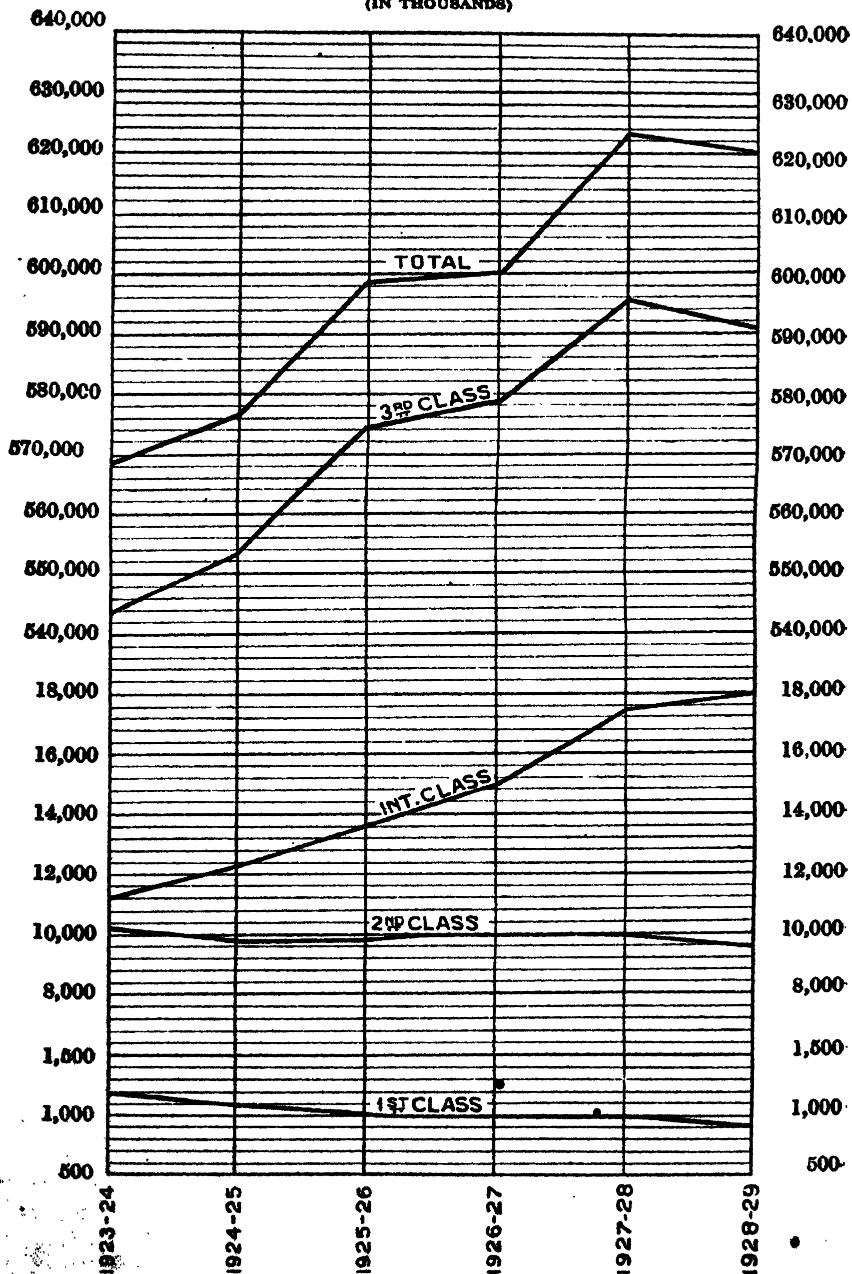
The Railway Rates Advisory Committee, which was constituted in 1926, continued to function during the period under the presidentship of Sir Narasimha Sarma, formerly Law Member of H. E. the Viceroy's Executive Council. The committee had three cases under enquiry on the 1st of April, 1929, and eight more cases were referred to it for investigation during the year.

As regards rates and fares in general, readers of previous editions of this Report will recollect that substantial reductions have been effected during both 1927-28 and 1928-29. During the year under review, however, no further general decrease proved possible, owing to the adverse financial circumstances which are fully set forth in the latter part of Chapter VII. One small but satisfactory alteration was nevertheless effected, and consisted in an increase which was introduced on practically all the railways from the 1st of January 1930 in the scale of free luggage allowance for passengers. The old scale, which was brought into force more than forty years ago, allowed 2nd class passengers 30 seers of free luggage, intermediate class passengers 20 seers, and 3rd class passengers 15 seers, and under the new arrangements these allowances have been increased to 40, 30 and 25 seers respectively. First class passengers were not affected by the change.

Mention has been made in previous Reports of the important work achieved by the Central Publicity Bureau, which was first established in 1927, in encouraging the growth both of tourist traffic from abroad and of local traffic in India; and during 1929-30 the results of this propaganda have continued to be satisfactory. Five State-managed railways, namely, the North-Western, the Eastern Bengal, the Great Indian Peninsula, the East Indian, and the Burma Railways,—and two company-managed railways,—namely, the Bombay, Baroda, and Central India, and the Bengal Nagpur Railways,—had already participated in the work of the *bureau*, and during the period under review the Mysore Railways joined it. The functions of the *bureau* are to co-ordinate the work done in India by the Publicity Branch of each of the railways concerned, and to be responsible for the production of films, photo-

NUMBER OF PASSENGERS CARRIED ON INDIAN RAILWAYS

(IN THOUSANDS)



graphs, pamphlets and posters suitable for use overseas as well as in India, for the issue of the Indian State Railways Magazine, for the supervision of the working of the railway publicity *bureau* in London and of a similar *bureau* in New York which was opened during the year, and for all other overseas publicity.

The film-production branch continues to be one of the most important parts of the *bureau*. Apart from topical films, the most interesting productions of the year were films of *kheddah* operations in Mysore and of the *Kumbh Mela* at Allahabad, and a descriptive film of Mysore. Film libraries were started on all railways and a copy of every film produced by the *bureau* was supplied to each of them. The popularity of the displays given by cinema cars showed no decrease, 943 shows being given at which the attendance aggregated well over 1,800,000. There are now nine cinema cars on railways that have joined the Central Publicity Bureau, and it is being increasingly realized that the exhibition of films has a definite educative value in a country where a large proportion of the population is illiterate. The subjects of the films shown included amusements, educational subjects such as health, agriculture, and so forth, and such matters as would encourage travel to pilgrim centres.

Special steps were taken during the year to expand the photographic output of the *bureau*, in order to meet the large demands for photographs from the London and New York *bureaux* and from newspaper proprietors, press correspondents, and descriptive writers from all over the world.

A general pamphlet on India and Burma, containing information concerning shipping lines to India, particulars of the facilities provided by Indian railways, and other matters calculated to assist overseas tourists travelling in India, was produced, and 75,000 copies were distributed. Eight other new pamphlets were also published, and the total number of copies issued by the *bureau* during the year was 347,803. Various pamphlets were also issued by individual railways in English and the vernaculars to advertise their own services. Posters are now exchanged on a reciprocal basis with railways in England, France, Germany, Italy, Canada, South Africa, Japan, Austria, Hungary, Tasmania, New Zealand, Switzerland, Beira, Mashonaland, Rhodesia, Iraq, Norway, Kenya and Uganda. A total of 28,137 pictorial posters were issued by the *bureau*, apart from the large number of pictorial and letter-

press posters issued by individual railways to draw attention to places of tourist interest, pilgrim centres and convenient train services. The Indian State Railways Magazine was further improved during the year, and there has been a steady increase in its circulation. The magazine describes the interesting places in India, its flora, the customs of its inhabitants, and the many forms of sport which await both the sojourner and the tourist. Supplements to the magazine dealing more particularly with local staff news have continued to be published by the North-Western, East Indian, Great Indian Peninsula and Eastern Bengal Railways. Some are published partly in English and partly in the vernacular known to the majority of the employees.

The London *bureau* moved into its new offices at 57, Haymarket, a locality in which the leading shipping lines, tourist agencies, and foreign publicity *bureaux* have their offices. A branch office has also been opened in India House, Aldwych. Advertising in the leading English journals, participation in the principal exhibitions and fairs, the showing of films, and the display of posters, were some of the methods employed to attract tourists to India. A publicity *bureau* was also opened in the United States during the year. At the outset an office was temporarily opened at 342 Madison Avenue, New York, but it subsequently became evident that a better site and greater expenditure on advertising were necessary. Accordingly, a ground floor office was rented at 38 East 57th Street. Among the forms of publicity undertaken by this *bureau*, in addition to advertisements of a high standard in newspapers and periodicals, are good action photographs, lectures, --sometimes illustrated by films or lantern slides,—window displays in the leading shops and banks, and broadcasting.

Publicity in connection with 3rd class travel has also received considerable attention, but as the conditions governing this class of traffic vary on different railways the efforts made to encourage the potential 3rd class passenger to travel are primarily the concern of the Publicity Officer on each railway. That the 3rd class passenger can be directly encouraged to travel has been shown on more than one railway, as for example, on the metre gauge section of the Bombay, Baroda and Central India Railway during 1929-30. In the area served by this line the crops had failed and economic conditions were below normal, yet as a result of personal canvassing, during a period of nine months twenty special trains

were run, carrying passengers the great majority of whom would not have ordinarily travelled. Third class conducted specials were also run on other railways. One demonstration train was organized during the year on the metre gauge section of the Eastern Bengal Railway in collaboration with the Government of Bengal, and halts were arranged at the smaller stations for two days so as to give the agricultural classes ample time to see all the exhibits and obtain from the demonstrators such information as was desired. In addition, bazaar specials were run on the Eastern Bengal, Great Indian Peninsula and Burma Railways during the year. The Bombay millowners also organized a special demonstration train which visited a large number of stations on the Great Indian Peninsula, North-Western and East Indian Railways.

One of the most significant occurrences of the year, which affected the Railway Department as well as many other branches of the Administration, was the promulgation of new rules by the Government of India for the supply of articles for the public service. The main principle underlying these rules is that tenders for all such articles,—with the exception of certain stores of a very special kind,—should provide for delivery in India and for payment in rupees. The subsidiary instructions to be issued in this connection for the guidance of State-managed railways are under preparation, and attention is also being given to the question whether the new rules can be adopted by the company-managed railways. In any case, a feature of the Railway Board's policy has recently been that increasing use should be made by the State-managed railways of the Indian Stores Department, since it is felt that as a rule this organization is in a position to make purchases more advantageously than the Railway Stores Department; and the value of the material acquired through the former body has shown a steady and substantial increase during recent years, having risen from Rs. 75·42 lakhs in 1926-27 to Rs. 150·46 lakhs in 1929-30. Another development which has also been inspired by the desire to make the best possible use of the country's own institutions and resources for all work connected with railways has been the experimental work which has recently been in progress on Indian timbers. Burma teak, which has hitherto been used extensively in the carriage and wagon shops of the Indian Railways, is tending to become increasingly expensive year by year, owing to the magnitude of the demand and the diminution in the sources of supply, and strenu-

ous endeavours are being made to find cheaper but equally efficient indigenous substitutes. The kiln-seasoning plant at Lillooah, on the East Indian Railway, which has been erected as an experiment for the benefit of all State-managed railways, was actually not completed during the year, but in May 1930 it began to operate. The output of substitute timbers will be widely distributed so that opinions on them may be collected simultaneously after trial under varying climatic conditions. Besides the experimental kiln-seasoning plant at Lillooah, there are now two sleeper-treating plants in regular use in India. At Dhilwan, on the North-Western Railway, over 7 lakhs of coniferous sleepers were impregnated during the year, and at Naharkatya on the Assam-Bengal Railway there was an output of over 2 lakhs of treated sleepers. At the latter place the erection of the plant has led to types of timber being exploited for sleepers which had not been used before.

The Railway Staff College at Dehra Dun, which was mentioned in last year's Report, was completed during the year under review; the College actually started functioning in January, and on the 3rd of April 1930 it was formally opened by H. E. the Governor of the United Provinces. The estimates for the scheme amounted to about Rs. 25,00,000, but the actual expenditure was about Rs. 1,00,000 less than this. On the 6th of January, the first course of instruction for transportation and commercial probationers started, 16 students being in the class, and on the 20th a refresher course for junior officers began and was attended by 12 officers from various railways. The College has accommodation for 64 students, and as it was anticipated that for the first year at least it would be difficult to use this completely if only officers were admitted, the refresher courses for subordinates previously held at Chandausi were temporarily transferred to Dehra Dun.

The importance of the railways in the life of the country and the wide scope of employment that they offer naturally makes the "Indianization" of the railway services a matter which excites great interest. The personnel of the lower and subordinate ranks is of course predominantly Indian in any case, and the question over which the country is now exercised is the Indianization of the superior or gazetted ranks of the services. This process has been accelerated within recent years. Of the officers recruited to the permanent establishment during 1929-30, 71 per cent. were Indians, compared with 70 per cent. in 1928-29 and 68 per cent. in

1927-28. Analyzing these figures functionally, we find that the percentage of Indians appointed to the engineering branch was 71, to the transportation (traffic) and commercial branches 80, to the mechanical and transportation (power) branches 73, and to other branches 67. On the company-managed railways, the number of Indians appointed during 1929-30 was 49·2 per cent. of the total vacancies filled in the case of permanent appointments, and 100 per cent. in the case of temporary posts. In the higher subordinate grades there was an increase of 314 in the number of Indians and a decrease of 49 in that of Europeans.

Unfortunately, as has already been briefly indicated in the previous Chapter,—as also in Chapter I,—the railways were not immune from labour troubles during the period under review, and three strikes occurred, one on the Great Indian Peninsula Railway, another on H. E. H. the Nizam's State Railway, and the third in the collieries of the East Indian Railway.

The trouble on the Great Indian Peninsula Railway was the most serious. During the latter part of 1929, the workers alleged that they had certain grievances, and in December, the Great Indian Peninsula Railwaymen's Union decided to call a one-day's strike on the 4th of February 1930, if their demands were not granted by that date. In January, the Agent invited the president and other leaders of the Union to discuss matters, but the interview did not result in any agreement; and towards the end of the month a general meeting of the Union was held at Manmad at which it was decided to call the strike on the appointed date, and to extend it if necessary beyond one day, in protest against the allegedly unsatisfactory reply given by the railway administration to certain of the Union's demands,—despite the fact that the Agent had already explained, in a statement to the Press, that the principal demands submitted by the Union had either been dealt with or were being actively and considerately examined both by the railway administration and by the Government of India. On the 4th of February, therefore, about 20,000 of the staff struck work, 13,000 of them being men employed in the workshops at Parel, Matunga, Jhansi and Manmad, and the remainder employees concerned with the movement of traffic. Efforts were made to involve the Great Indian Peninsula Railway Staff Union and other railway workers in a sympathetic strike, but without success. The workshops at Parel and Matunga were entirely closed on

account of the strike, but as the drivers, guards, firemen and stokers did not join the strikers, it proved possible to maintain the train services. Suggestions were made by various bodies including the Great Indian Peninsula Railwaymen's Union and the All-India Railwaymen's Federation for the appointment of a Conciliation Board; but on the 28th of February, Diwan Chaman Lal, Mr. Giri and Mr. S. C. Joshi, the representatives of the All-India Railwaymen's Federation, had an interview with the Honourable Sir George Rainy, K.C.S.I., K.C.I.E., the Member for Commerce and Railways, as a result of which an arrangement was made for terminating the strike. Under this settlement, the Government undertook that the railway administration would not refuse to take back into service any employee merely because he went on strike, and that every employee who offered to return to duty by the 15th of March,—a date which was subsequently extended to 17th,—would be allowed to do so provided that the post he held when he proceeded on strike had not been permanently filled, and provided also that he was not discharged for reasons other than the strike. The Government also undertook that a waiting list would be maintained by the Agent of the railway of all employees who offered to return to duty within the prescribed period, but who were unable to do so by reason of the fact that the posts held by them had been permanently filled; and that each employee whose name was on this list would be offered the first refusal of employment in the same or in a corresponding position to that which he held when he proceeded on strike; and that any employee who declined to accept the offer of employment would be removed from the list. As a result of this settlement, the strikers began to drift back to work, and by the end of March about 50 per cent. of the staff excluding workshop employees had offered to return to duty. Out of a total of 13,000 men employed in the workshops at Matunga, Parel and Jhansi, 1,200 men resumed duty on the 17th of March, and on the 22nd, 3,413 men had resumed work at Jhansi, though this figure dropped to 1,049 on the 24th. The strike, however, dragged on beyond the 31st of March 1930.

Almost at the same time as the stoppage on the Great Indian Peninsula Railway there occurred the two other strikes which we have referred. Between the 1st and the 13th of February, the miners and leaders at the Kurharbaree and Serampur collieries on the East Indian Railway, numbering about 3,828, went on strike,

apparently from the belief that the Royal Commission on Labour which had visited Giridih on the 29th of January had come to increase wages; some alleged minor grievances were also mentioned. The colliery superintendent met a deputation from the men and promised to enquire into the matter, and by the 21st of February conditions had practically reverted to normal. On the 28th of February about 3,000 men employed in the Lallaguda sheds and workshops of H. E. H. the Nizam's State Railway ceased work, as a protest against the terms of bonus which the company's board proposed to grant only to contributors to the provident fund, and the strike subsequently spread to locomotive menials at the engine changing stations and to a few of the traffic menials. The men ultimately returned to work on the 18th of March, after an assurance had been given by the railway administration that a recommendation would be made to the Board of Directors to condone the break of service of the staff during the strike, in so far as the grant of service gratuities on retirement was concerned.

Apart from the attempt to wreck the Viceregal train as it was approaching Delhi on the 23rd of December 1929, which has already been mentioned in Chapter I, five other accidents sufficiently serious to deserve mention occurred on the railways during the year. On the 26th of May 1929, a passenger train near Samastipur, on the Bengal and North-Western Railway, was derailed by a cyclonic storm, and nine persons were injured; the damage to rolling stock amounted to Rs. 3,000. On the 11th of June a relief train proceeding from Mupa to Langting on the Assam-Bengal Railway suffered derailment owing to a subsidence of the track caused by floods, and six railway employees were killed; the damage done to the permanent way and to rolling stock was estimated to amount to Rs. 10,500. A further derailment due to similar causes occurred on the 13th of July, on the Kosamba-Umarpada branch of H. H. the Gaekwar of Baroda's State Railways, when the engine, the tender, and two coaches of a mixed train fell down an embankment and caused the death of the engine-driver. An accident found to have been due to the removal of parts of the line took place on the 1st of August between Bhatpar Rani and Bhatni Junction stations, on the Bengal and North-Western Railway, as a result of which one person was killed, two were seriously injured,—of whom one subsequently died,—and ten others were slightly injured. And on the 10th of January there occurred the most

serious accident of the year, when the Peshawar-Lucknow Express collided at Clutterbuckganj Station, on the East Indian Railway, with a goods train, with the result that eleven persons were killed, twenty were injured,—one of whom succumbed,—and damage estimated at Rs. 83,300 was done to rolling stock.

Despite the extent and efficiency of the railway system, it is obvious from the facts we have given,—such as the comparison of the railway mileage of India and the United Kingdom,—that roads must always have played a vital part in Indian rural economy, owing to the wide tracts of the country which are still quite untouched by railways. Even during the second half of the XIX century, when railway development was proceeding apace and motor transport was not thought of, it was recognized that a system of well-kept and well-constructed roads would be a necessary concomitant of the country's economic and cultural development, and that the existing system had very grave deficiencies. And now that the implications of motor transport is more generally understood, questions connected with the roads of India attract an increasing amount of public attention year by year. The full extent of the social and economic revolution brought about in Europe and America by the intensive development of motor transport during the last quarter of a century cannot yet be clearly foreseen; but it is already certain that the Motor Age is likely to have an even more profound effect upon the lives and habits of ordinary people than the Railway Age did before it,—owing to the greater range and mobility of the new method of transport. In this country, the revolution can scarcely be said to have yet begun, but it is rapidly approaching, and is bound to bring about a great transformation in rural India, not only by enabling the ryot to market his produce to better advantage, but also by widening his range of interests and bringing him more in contact with the social and political developments of the rest of the country.

One result of the comparative backwardness of road transport in India is that it should be possible to avoid some of the more unfortunate consequences which have attended its rapid development elsewhere. For example, attention was drawn in the Report of the Royal Commission on Agriculture, which was published in 1928, to the senseless and wasteful competition which was then taking place in European countries between rail and motor transport, and it was urged that in India, the development or railways

and roads should be regarded as complementary to one another. If co-ordination can be achieved on these lines it will undoubtedly be a great advantage, and enable the railway authorities to proceed with the construction of certain branch lines which otherwise they might hesitate to embark upon.

Even prior to 1920, roads were primarily the concern of the provincial Governments and local bodies; and under the Reforms their upkeep and maintenance become one of the "transferred" subjects. But the arrangements made within the different Provinces for dealing with them vary considerably. In some, the roads are mostly under the charge of the provincial Public Works Department, whilst in others, the District Boards or equivalent local bodies, assisted by grants from the provincial revenues, have assumed the bulk of the responsibility. Generally speaking the provincial Governments,—as one would expect,—have direct charge of the larger roads and the local bodies of the smaller ones,—although the ultimate responsibility in either case lies with the provincial Government. Of recent years, however, as we indicated in our last volume, there has been a new development, owing to the increasing realization that some aspects of road development are really passing beyond the financial capacity of provincial Governments altogether, and becoming a national or "All-India" interest which may properly receive some contribution from Central revenues; and during the year under review, as we shall shortly see, certain interesting developments took place in this connection.

The main features of India's road system can be shortly described. There exist four great trunk roads, stretching diagonally across the country, which form the framework to which most of the important subsidiary roads are in some way attached. These trunk roads have been in existence for an immense period and are rich in historical association. The most famous is the ancient marching route,—known as the Grand Trunk Road,—which stretches right across the Northern part of the country from the Khyber to Calcutta; the other three connect Calcutta with Madras, Madras with Bombay, and Bombay with Delhi, and the four of them together account for about 5,000 out of the 60,000 miles of metalled roads in British India. None of these roads however can be considered safe "all-weather" trunk roads according to European standards. The Madras-Calcutta road in particular is far from being bridged throughout its entire length, and

its improvement even in the Madras Presidency would be likely to absorb a large proportion of the road development fund for some years to come; whilst further North, where it enters Orissa, it has to cross so many large waterways that it will be out of the question to make it a complete trunk road in the modern sense within any predictable period. And even the other three roads require a great deal of improvement; on the Grand Trunk Road from Calcutta to the North-West Frontier, for example, there is as yet no bridge over the river Sone in Bihar, and on all of them there are places where floods are liable to cause serious interruption to traffic. As regards the subsidiary roads, the best and most numerous are to be found in the Southern portion of the country. As one would expect, the worst served districts are Rajputana, Sind, and parts of the Punjab on the one hand, and Orissa and Bengal on the other, the former owing to its aridity and sparse population, and the latter because of the numerous unbridged and largely unbridgeable waterways which dissect it; in addition of course there are numerous other regions, such as the lower Himalayas, where the difficulties of nature provide obvious reason for the absence of good communications. Besides surfaced roads, there is of course a very large mileage of '*kachcha*' road throughout the country, some of which is quite practicable for motor traffic during the dry weather. On the whole however it would be reasonable to say that India's road system, even before the advent of motor transport, was altogether insufficient for her needs; and it was the increasing realization of this fact that led to the appointment of the special Road Development Committee, whose activities were described in our previous Report.

During the earlier part of the period under review the Government of India was engaged in considering the proposals laid down in this committee's report, and by September 1929 its conclusions had been embodied in a resolution which was passed by the Legislative Assembly and the Council of State during the following February and March. The first provision was that the increase from 4 to 6 annas per gallon in the import and excise duties on motor spirit, which had been effected during the period covered by our last issue, should be maintained for a period of five years in the first instance, and that the proceeds of the additional duty should be allotted as a block grant for expenditure on road development, and credited to a separate road development

account, whose unexpended balances should not lapse at the end of the financial year. It was also provided that after a certain proportion of the grant had been retained by the Government of India as a reserve, the remainder should be apportioned among the Governor's Provinces in the ratio which the petrol-consumption in each Province bore to the total consumption in India during the previous calendar year; and that the balance, representing the consumption of petrol in Provinces other than Governor's Provinces, administered areas, and Indian States, should be allotted as a lump sum to the Government of India. A further provision was that a Standing Committee for Roads should be constituted every year, to consider the annual budget of the Road Development Account, and to advise the Government on all questions relating to roads, and in particular on the action to be taken by the Government on the proceedings of the periodical Road Conferences.

At the conclusion of the period under review the majority of these provisions were being put into effect. The Standing Committee for Roads for the year 1930-31 had been constituted, and after reference to their Finance Sub-Committee had approved the appointment of a Road Engineer, as had been suggested in the original Report of the Road Development Committee. Arrangements were also being made for convening a Road Conference during the early summer.

The first year's revenue from the additional petrol duty amounted to Rs. 93,90,000, which exceeded the estimate by Rs. 10,60,000; and the estimate for the year 1930-31 is Rs. 1,08,00,000.

Enough has now been said to indicate the profound effect which the development of railways and roads is having upon the lives of the common people of India. Perhaps even more important, owing to the intimate and numerous services it performs, is the system of Posts and Telegraphs. In fact, of all the administrative achievements of the British *Raj*, this is often claimed,—with some justification,—to be the most impressive. For not only has it been established in the face of unusual difficulties, but it has undertaken functions never before attempted by any similar institution, and achieved them with such success as to secure the unquestioning reliance of all classes of the community.

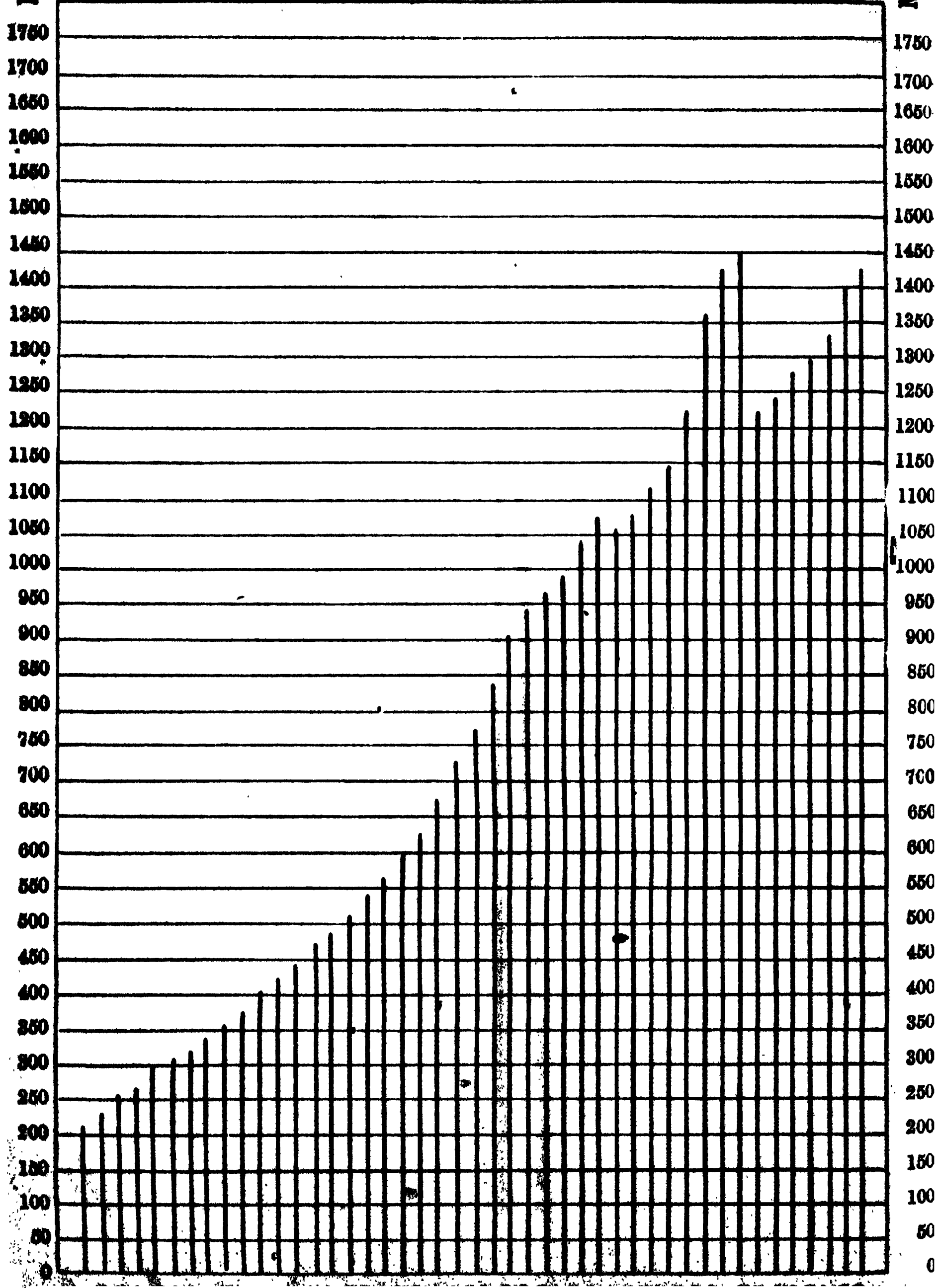
On the difficulties we need scarcely expatiate; it is sufficient to say that the vast size of India, its climatic diversities and feroci-

ties, its innumerable human differences,—resulting in confusion both of tongues and scripts,—and the profound ignorance and illiteracy of the great majority of its enormous population, combined to present the pioneers of postal administration 80 years ago with a problem of exceptional magnitude. A brief description of the achievements and workings of the system as it exists to-day should enable the reader to realize the extent to which the problem has been overcome.

First let us give a few figures to indicate the size and recent development of the organization. The total number of post offices in India during the calendar year 1928-29,—which is the latest period for which figures are available,—was 22,820, as against 12,397 in the year 1900. The number of articles handled by the Department,—exclusive of money orders,—was 1,386 millions, consisting of 579 million letters, 591 million postcards, 91 million registered newspapers, 108 million packets, and 17 million parcels, whereas in the first year of the century the total number of articles dealt with was 509 millions. In addition, over 40 million money orders were issued during the year under review. Of the enormous number of postal articles received, no less than 99·92 were safely delivered, and failure to deliver the remainder was largely due to inadequate or non-existent addressing. The total mileage over which these articles were conveyed amounted to 166,941,—a great deal of which of course lay through wild and desolate country in which the mails were exposed to many natural dangers. Some indication of the scope of the Department's activities can also be gathered from the fact that its total gross receipts during the year amounted to Rs. 11·03 crores (as against Rs. 3 crores in 1900) and that the number of officials in its employment was 129,902 as compared with 61,750.

But the most interesting feature of postal operations in India is not so much their magnitude,—which, although impressive in itself, is nothing to what it might be,—as their variety. To appreciate this we must transport ourselves in imagination away from the towns and industrialized portions of the country,—where conditions closely resemble those to which European readers are accustomed,—and visit the country districts which contain the great majority of the population and in which the truly characteristic life of India is to be found. Here the village postman is a figure of immense importance. Besides performing his obvious

Growth of Postal Traffic since 1884-85—All Articles.



function of clearing letter boxes delivering correspondence, dealing with money orders, and suchlike, he undertakes many other activities quite outside the scope of ordinary postal work. In fact he is not so much a postal official as a perambulating public utility agent, often taking several days to get round his beat, and forming almost the only link between the rural populace and the outside world. Amongst the activities which the Department undertakes through its rural officials is the payment of pensions, the collection of salt revenue, and of customs charges on dutiable articles coming into India by post, the arrangement of life insurance for Government employees, and the sale of quinine. By means of the Cash on Delivery System it enables the rural population to accomplish their shopping despite their remoteness from towns; it provides banking facilities through the Post Office Savings Bank; and it is the custodian of the postal and telegraphic stores which are kept in reserve against military mobilization. Thus the Department performs indispensable services as the agent of the Government in numerous detailed matters, and the influence it wields as an instrument of civilization in districts otherwise remote from it, is certainly great.

The confidence which the general public reposes in the Department is well demonstrated by the wide and increasing use which is made of its Savings Bank. And not only has the total amount of the deposits risen substantially, but there has been an even more suggestive advance in the average balance at the credit of each depositor. This should give the economist and political philosopher food for thought; since were there truth in the assertions now so frequently made that the inhabitants of the country have become poorer under the existing administration, and that they have lost trust in it, one would hardly expect that the average individual deposits should have grown from Rs. 122·77 in 1900 to Rs. 170·67 in the year now under review.

Let us turn now to consider the actual working of the Department during the year 1928-29. As will be seen from the diagram opposite, the steady expansion which has been taking place in its activities during recent years has continued. The number of postal articles was as much as 38 millions greater than during the previous year. Moreover the staff was increased by 4,014, and the number of post offices by 1,212.

A feature of the Department's policy during the past few years has been the vigorous extension of postal and telegraphic facilities in rural areas, which of course closely resembles the policy of rural expansion adopted by the Railway Board and already described. In neither case is the immediate object the acquisition of new revenue, though ultimately of course it is hoped and believed that these developments will prove fully remunerative. But at present they are as much philanthropic as commercial ventures, being primarily designed to introduce the benefits of modern means of communication into the more backward parts of India, and to enable their inhabitants to be brought into closer contact with the economic and cultural tendencies of the rest of the world. So far as the Posts and Telegraphs Department is concerned this policy has been energetically pursued since the last edition of this Report appeared, and 1,466 new experimental post offices have been opened, as compared with 1,324 during 1927-28. Moreover 1,465 village postmen have been authorized to accept inland telegrams and despatch them to the nearest telegraph offices. Considerable improvement has also been effected in the transport of mails. One of the characteristic features of mail transport in India, owing to the vast areas of difficult country which have to be covered, is the use of "runners". In 1928-29, 15,322 of these men were in service over beats whose aggregate length totalled 87,252 miles, and the very high percentage of mails that were safely delivered is sufficient testimony to their efficiency. Nevertheless this method of transport is obviously primitive, and exposed to peculiar dangers in the shape of storms and floods, wild beasts and human malefactors; and consequently every opportunity is taken to extend and improve the already well-organized rail and motor mail services. As regards the former, the chief event of the year was the completion of the administrative re-organization whereby local control has been transferred from the former "railway mail service circles" to the Postmasters General, who have also now been placed in charge of the engineering branch of their departments. This unification of control has obvious advantages in times of emergency which have already been amply demonstrated. The motor mail services have also been improved, their total mileage having been increased from 10,843 to 13,033.

Other noteworthy events in the working of the postal side of the Department during the year were certain alterations and

developments in connection with its foreign mail services. For example, the insurance system for parcels was extended to Greece and that for letters to New Zealand and Samoa; the telegraphic money order service was extended to Zanzibar; and the limit of weight on parcels addressed to the Dutch East Indies was raised from 11 to 20 lbs. Interesting developments also occurred as a result of the introduction of the Air Mail Services, which will shortly be described; special stamps of 2, 3, 4, 6, 8 and 12 annas denominations were introduced to pre-pay the Air Mail fee on the Karachi-Croydon and Karachi-Delhi route, and arrangements were made for the transmission by air mail of money orders for Great Britain and Northern Ireland. Facilities were also provided for the acceptance of inland telegrams for transmission by telegraph as far as Karachi and thence by air mail to Iraq, Palestine, Egypt, and Great Britain. These telegrams are chargeable at the Indian inland rates *plus* the air mail fee in addition to the usual letter postage, and should prove particularly useful to members of the public who live in parts of India remote from Karachi.

One point requires to be borne in mind in connection with postal activities in India, and that is their vast potentialities for expansion. In spite of the fact that the number of letters and postcards handled annually is well over a thousand millions, this only represents, in relation to the total population of the country, the despatch of 4·45 such articles per head per annum. If by a perhaps somewhat optimistic stretch of the imagination we can invisage an India, say 100 years hence, in which really substantial progress has been made towards the removal of illiteracy and penury, the present dimensions of the Department's activities appear as a mere embryo of what they might become. If no more than 70 per cent. of the population were literate, the Indian Posts and Telegraphs Department might well become the largest in the world.

Apart from the Department's purely postal activities, there are also its telegraph, telephone, and wireless services to be considered. At the end of our period the total number of telegraph offices in India was 10,306, and the mileage of line connecting them amounted to 101,994. The great problem of telegraphic communication in India is how to maintain the vast length of over-head wire in good condition, owing to the lonely and difficult country through which

it often runs and the variety of climatic and other natural interferences to which it is exposed; and efficient working is only achieved by means of incessant and highly organized patrolling. The telegraphic material in use for which the Department was responsible during 1928-29 included 466,721 miles of wire, 82,478 miles of conductors, and 1,073 miles of cable, and the extension of its activities during recent years is indicated by the fact that whereas in 1900 the total number of telegraphic messages dealt with was 6,237,301, in 1928-29 it amounted,—exclusive of course of wireless messages,—to 20,241,004. Features of the year included the extension of the daily letter-telegram service to France, Holland, Italy, Portugal, Switzerland, Algeria, Tunis, and Portuguese East Africa,—and of the week-end letter-telegram service to Austria, Belgium, France, Luxemburg, Switzerland, Algeria and Tunis. Arrangements were also made for the telegraphic transmission to destinations throughout India, of communications sent by post from foreign countries to telegraph offices at Indian ports. The year also saw the adoption in India of the new rules for the use of code telegrams which were devised during the International Telegraph Conference held at Brussels in September 1928.

In recent years the dearth of telephonic communications in India has begun to arouse considerable criticism, and there is no doubt that the existing system is capable of great extension and improvement, and that, in relation to the total population of the country, and in comparison with the systems established in Europe and America, the facilities it provides are poor. But besides being subject to all the difficulties to which Indian communications in general are exposed, it must be remembered that telephony in India is peculiarly handicapped by the immense variety of tongues and accents in use throughout the country. And although improvement is perhaps not as rapid as it might be, it is considerable. In 1900 the Department had 42 exchanges with 500 connections; in the year under review the corresponding figures were 288 and 19,935,—the number of exchanges having increased by 8 since 1927-28. And besides the exchanges worked by the Department there are also those run by the licensed Companies. The number of these rose from 18 to 22 during the year, and as they are mostly situated in the larger towns, their connections are proportionately very much more numerous than those of the Department's exchanges, and amounted to 33,750. Considerable

development also took place in connection with the installation of the automatic system, and the number of automatic exchanges in India, including satellite exchanges, is now 28; trunk line facilities were also substantially increased during the year, 7 additional trunk circuits having been opened, namely the Lahore-Jhelum-Rawalpindi, Lahore-Qilla-Sheikhupura, Lahore-Ambala, Lahore-Jullundur City, Mandalay-Sagaing, Rangoon-Taikkyi, and the Rangoon-Hmaubi connections. The telephone revenue for the year showed a satisfactory increase, having risen from Rs. 48,14,105 to Rs. 52,50,138.

In general, however, the financial position of the Department was not satisfactory. Although the total gross receipts for 1928-29 were greater by Rs. 21 lakhs than they were during the preceding year, and amounted, as we have already mentioned, to Rs. 11·03 crores, working expenses rose by no less than Rs. 42 lakhs to Rs. 10·95 crores. After paying interest on capital the Department therefore suffered a loss of Rs. 54 lakhs. It is true that in the past its success has largely been due to the fact that it has been quite satisfied if receipts covered expenditure by a small margin, and that it has never been considered to be solely a revenue-earning concern. It is also true that the recent increase in working expenses is almost entirely accounted for by attention to the welfare of the staff and improvement in wages, and that the failure of the income to overtake the increase in expenditure has been largely due to the depression in trade and the political uncertainty. But endeavours will clearly have to be made during the next few years to re-establish the Department's activities on a remunerative basis, especially in view of the fact that the recently published figures for 1929-30 disclose a loss even greater than that experienced during the year under review.

Considerable developments in wireless telegraphy took place during the year. So far as internal communications are concerned, no attempt has hitherto been made, except in the case of the long-wave circuit between Madras and Rangoon, to supersede the established telegraphic arrangements by wireless transmission, since the use of multiflex telegraphy renders the capacity of the land lines quite sufficient for the calls that are made upon them, and the system of patrols already described keeps them in a satisfactory state of repair. Nevertheless interesting experiments were made in short-wave transmission during the year, as a result of

which communication has been established, and telegraphic traffic regularly passed by a limited staff, between Calcutta and Rangoon and also between Rangoon and Madras.

External communications were satisfactorily maintained by means of the "beam" service, which is worked by the Indian Radio Telegraph Company under a licence, and the amount of traffic carried steadily increased.

Substantial technical improvements have been effected in the country's existing wireless stations, and progress has been made towards the construction of new ones. The remodelling of the transmitters at Calcutta and Secunderabad were completed, and at Calcutta arrangements were also made for the establishment of a separate receiving and direction-finding station which will be available for communication with aircraft as well as with ships and other stations. At Karachi, additional apparatus for short-wave transmission was expressly installed for the use of the new Civil Air Services. Separate direction finding and receiving apparatus is also to be provided at the Delhi and Allahabad stations with the same object, and now stations are to be constructed at Jodhpur and Gaya.

Considerable use was made of wireless in connection with the troubles in Afghanistan. After the two landlines from India were interrupted late in 1928, wireless communication was established between Peshawar and Kabul, and except during the periods when the Kabul station was put out of action, all official and private telegrams were satisfactorily transmitted. Special wireless facilities were also provided at Karachi for the use of aeroplanes proceeding between Peshawar and Kabul during the evacuation. Incidentally, similar arrangements were also made, both at Karachi and at the stations between Victoria Point and Kabul, on the occasion of the flights to India by R. A. F. flying boats from Iraq and from Singapore.

Another event of the year which deserves mention is that as a result of the International Radio Telegraph Convention held in Washington during 1927, various alterations were made in the Indian Telegraph Act in order that it might be brought into conformity with international arrangements.

The development of wireless broadcasting has hitherto been disappointing, especially in view of its immense practical and cultural possibilities in a country such as India. During the

year under review the two broadcasting stations operated by the Indian Broadcasting Company at Calcutta and Bombay continued to be in use, but the company was throughout embarrased by its revenue being substantially less than had been anticipated, and the quality of the programmes, which according to Western standards cannot be said to have been good at any time, suffered considerably. It is of course in any case difficult to devise programmes in India which will give general satisfaction, owing to the multiplicity of languages. Nevertheless, it is safe to predict that realization of the enormous potential importance of broadcasting, as an instrument of culture and entertainment, will in time result in the difficulties with which it has hitherto been confronted in this country being overcome; and considerable progress in this direction has in fact been taking place since the conclusion of the period covered by this Report.

We now turn to another modern invention whose influence upon ordinary existence is bound in time to increase,—namely aviation. During recent years its development in India has been remarkable, and its profound ultimate importance would be difficult to over-estimate. Already it has reduced the effect of the distance between Great Britain and India by more than half; it has put India in a position of exceptional strategic importance in the chain of Imperial communications, besides bringing her in much closer touch with the rest of the world; and is also providing the means whereby her own vast internal distances may be traversed with unprecedented speed.

The outstanding event of the year in civil aviation was of course the inauguration of the regular Air Mail Service between India and England, which actually took place one day before the opening of the period under review and was consequently described in some detail in last year's Report. The first air mail from England arrived at Karachi on the 6th of April 1929, after having covered the distance from Croydon in under 54 hours' flying time. The first machine in the service to leave India for England departed a day later. At present the service is a weekly one, and during the period under review the in-coming mail arrived at Karachi on Sundays, and the outgoing mail left on Tuesdays,—the journey either way occupying about 7 days. At the outset only mails were carried,—if we exclude certain officials who travelled as passengers in the inaugural flights,—but on the 2nd

of June 1929 the service was thrown open to regular passenger traffic. Naturally during its first year the service was largely experimental, but as experience is gained, and the ground organization consolidated, it will no doubt be capable of much improvement, particularly in so far as speed and accommodation for passengers are concerned. In addition there is no reason why night flying should not be ultimately practicable, and in this event the time now occupied by the journey would be almost halved.

Certain changes in the timing of the service, and also in the route at the European end, took place just after the conclusion of our period, and will be described next year.

Reference was made in our last Report to the call for tenders made by the Government in connection with the project of extending the air service from Karachi to Delhi, and eventually to Calcutta. Negotiations with the only firm whose tender seemed likely to be acceptable proved abortive, and ultimately the Government decided to initiate the service itself. But it was recognized that in the preliminary stages it would be of great practical value to draw upon the experience of a well-established concern, and accordingly an agreement was entered into with Imperial Airways for the establishment of a weekly service, called the Indian State Air Service, between Karachi and Delhi. The first flight occurred on the 30th of December.

Good progress can be reported in connection with the four Light Aeroplane Clubs at Karachi, Bombay, Delhi, and Calcutta, which were started last year with the object of providing Indians with facilities for learning aviation. Up to the end of December 1929, 72 members, of whom 24 were Indians, had obtained their pilot's "A" license. Among them was Mrs. Sylla Petit, who is the first Indian lady to obtain a pilot's license in India; she was trained by the Bombay Flying Club. The total number of flying members of the four clubs was 413. Sir Charles Wakefield generously presented as a prize, a D. H. Gipsy "Moth" aeroplane for competition between the clubs. It was at first intended that the competition should take the form of an aerial Derby, but the subsequent decision was that the machine should be awarded to the first club which was successful in turning out, from amongst its *ab initio* pupils, 10 qualified "A" pilots of whom at least six were Indians. The Bombay Flying Club was the first to achieve this success and was accordingly awarded the prize.

In connection with the scheme for training Indians in civil aviation in England, which was mentioned in our last issue, the Government of India decided to award four scholarships in the year 1929. Three scholars were selected in India and the fourth in England by the High Commissioner.

The number of international flights across India during the year under review was 36, and thus exceeded the previous year's number by 20. The Dutch flights substantially exceeded the others, and amounted to no less than 17, owing to the fact that experimental flights were taking place between Amsterdam and the Dutch East Indies at fortnightly intervals throughout the autumn. In addition there were 8 French flights, 5 Australian, 2 British, 2 American, 1 Swiss, and one Chinese. There were three accidents in the international flights. In the first MM. Paillard and Le Brix, when bound for Saigon, crashed shortly after leaving Rangoon and M. Le Brix received injuries. In the second accident M. Le Brix was again involved. On this occasion he was accompanied by M. Rossi and was again bound for Saigon, when during a nocturnal flight over the Thaton District in Burma, the lights on his instrument board failed. As visibility was bad it was decided to abandon the machine by means of parachutes. M. Le Brix landed safely but M. Rossi's parachute was slow in opening and he was injured. The machine caught fire and was destroyed. The third accident happened in June to Mr. Van Lear Black, an American. His pilot when landing at the civil aerodrome at Dum Dum (Calcutta), which was then under repair, miscalculated the area available, and the machine was so extensively damaged that the flight had to be abandoned. Four other major accidents occurred during the year. In each case it was a D. H. Moth aeroplane belonging to one of the Indian Light Aeroplane Clubs which was involved, whilst being flown "solo" by qualified members. The damage done to the machines was extensive but none of the pilots was seriously injured.

During the year H. H. the Aga Khan offered a prize of £500 to the Indian who should first accomplish a solo flight from England to India or *vice versâ*. Three unsuccessful attempts were made during the year. On the 3rd March 1930, Mr. R. N. Chawla, accompanied by Mr. A. M. Engineer, whose father provided the aeroplane, started from Karachi and successfully completed the flight to England in 17 days. The flight complied with

all the conditions laid down for the prize except that a passenger was carried. The Government of India, however, granted Mr. Chawla a sum of Rs. 7,500 in recognition of his achievement. Mr. Chawla originally learned to fly in October 1928 at the Nottingham Aero Club, and returned to India in 1929 to continue his training with the Karachi Light Aeroplane Club. This further training was rendered possible by the generosity of a keen supporter of flying who placed funds for the purpose at the disposal of the Director of Civil Aviation. Mr. Chawla was the first pilot of any nationality to fly a light aeroplane from India to England. The other two unsuccessful attempts were made by Mr. Man Mohan Singh; but after the conclusion of the period under review he made a third attempt and succeeded in reaching India from England successfully. This "solo" flight, and also that of Mr. Engineer, who was the winner of the £500 prize, and who had been the passenger in Mr. Chawla's aeroplane during the flight from India to England, will be described in our Report next year.

An Extraordinary Session of the International Air Navigation Commission was convened in Paris during June, to consider the revision of the International Air Navigation Convention. The Director of Civil Aviation in India, Lt.-Col. F. C. Shelmerdine, O.B.E., represented India at this meeting and travelled there and back by Air Mail.

The sum provided for Civil Aviation in the budget for 1929-30 was Rs. 23,74,000, of which Rs. 17,05,300 was set aside for work connected with the ground organization of the air route across India. This included provision for hangars, electric supplies and suchlike at Karachi, Delhi, and Calcutta, for a new civil aerodrome at Delhi, for a new emergency landing ground at Badhal, and for the extension of the existing landing ground at Jodhpur. In addition, a site for a civil aerodrome was purchased at Rangoon, where hitherto the only possible landing place has been the race course. A site was also acquired for a civil aerodrome at Bombay. The ground organization for the through route from Karachi to Calcutta was practically complete by March 1930. Four hangars had been provided; two at Karachi, one at Delhi, and one at Dum Dum (Calcutta). The construction of a customs house and the electrification of the civil aerodrome at Karachi had also been completed,

and extensive improvements had been carried out to the landing grounds at Dum Dum and at Akyab.

Closely connected with the growth in the science of aeronautics has been the increased importance of meteorological organization. Until fairly recently the Indian Meteorological Department was designed to do no more than provide the public, by means of telegraphed reports, with accurate information concerning rainfall and temperature, and timely warnings of storms. But with the development of aviation many new duties have devolved upon it and have necessitated an almost complete overhaul of its organization. For it is of the utmost importance to aviators that they should have detailed and accurate information not only upon the meteorological occurrences that interest the ordinary public, but also on such matters as the strength and direction of winds at different levels, the height and structure of the clouds, the degree of visibility obtainable and the exact position and movements of such local phenomena as fogs, dust-storms, and thunderstorms.

In order to meet these requirements,—at any rate in so far as the recognized air routes which are now being established across India are concerned,—considerable developments have recently taken place. Two elaborate weather charts per day are now prepared at such Regional Forecast Centres in India as are specially concerned with aviation, and most of the existing weather observatories reporting to these centres have been raised to what is known as " second class status ". In November 1929 a new Forecast Centre under a meteorologist was opened at Delhi, and will be responsible for the supply of weather reports and forecasts to aviators using the Jodhpur-Delhi and Delhi-Gaya air routes. The Forecast Centre at Karachi, which was originally responsible for distributing information concerning the Basra-Karachi air-route, has now had its sphere of operations increased, and supplies reports and forecasts to aviators on the Karachi-Jodhpur route. A scheme has been devised whereby the meteorological responsibility for the Delhi-Calcutta and Calcutta-Rangoon routes shall be divided between the present Meteorological Office at Calcutta and a new Forecast Centre at Rangoon. This will necessitate the opening of a number of new weather observatories along the routes, and the creation of a closer network of pilot balloon stations. The Agra observatory has hitherto been responsible for the maintenance of all pilot balloon stations, and the proposed increase in their number

will add considerably to its work; moreover its hydrogen plant is scarcely sufficient to cope with the demand even under existing conditions, and plans have been made for extending it. During the year new pilot balloon observatories were opened at Aden and at Hyderabad, and arrangements were completed for the opening of a pilot balloon station at the Seychelles. The Agra and Poona observatories continued their soundings of the free air with instrument-carrying balloons in order to ascertain the air pressure, temperature, and humidity at various levels. The determination of definite temperature levels in the free atmosphere by means of the Chatterji temperature indicator was started experimentally at Poona, Agra, Lahore, Dacca, Alipore and Madras, and the results of the observations were telegraphed to the various Forecast Centres. Experiments with the object of devising new or improved methods for investigating conditions in the upper atmosphere were in progress at Agra, and the collection of data for an intensive study of the characteristic weather conditions of Bengal and Assam, and particularly of the origin and mechanism of " Nor' Westers," was continued. A special expedition was arranged by the Agra observatory to study the upper air conditions over Bengal during the 1929 " Nor' Wester " season, which yielded some interesting results and indicated that a more elaborate expedition in the future would be desirable.

An experimental first-class weather observatory was started at Poona during the year. An improved design of the registering mechanism of anemometers was evolved at headquarters and steps were taken to convert a large number of old and mostly unserviceable anemometers to the new type. A number of other investigations, experimental and statistical, were taken up or completed and the results published in the form of scientific notes and memoirs of the Meteorological Department. A few papers by members of the staff were also contributed to foreign scientific journals.

Warnings of storms and heavy rainfall continued to be issued as usual from Poona and Calcutta. During the 9 months from the 1st of April, 2 major storms formed in the Arabian Sea and 3 in the Bay of Bengal. In addition, warnings of depressions, squalls, or winter disturbances were issued on 25 occasions to the Arabian Sea area from Poona and on 27 occasions to the Bay of Bengal area from Calcutta. The warnings were generally considered to be timely and satisfactory by the recipients. Demands

for weather reports and forecasts in connection with aviation increased greatly during the year, and were met as promptly and satisfactorily as the available organization allowed. Other routine activities, such as the compilation and publication of climatological data, the maintenance of seismological and magnetic observations, the determination of time and the issue of time signals, were carried on in the same way as they have been in the past.

During the year the Director General of Observatories travelled to Europe to represent India at the Empire Meteorological Conference which was held in London in August, and at the International Meteorological Conference held in Copenhagen in September. The Conference in London afforded an excellent opportunity for discussing the special meteorological problems of the Empire such as the relations of meteorological organization with the development of Imperial aeroplane and airship routes, the practical uses of maritime and agricultural meteorology, and the employment of wireless for communicating weather reports. The resolutions passed at the International Conference at Copenhagen aim at unifying the methods of observing, calculating and publishing meteorological data, and at co-ordinating the programmes of work in the many matters that depend for their success on close and efficient co-operation among the meteorological services of different countries. Hitherto, the use of international weather codes has been confined almost exclusively in Europe, and they did not deal with tropical meteorology. In the new specifications adopted at Copenhagen tropical phenomena have been incorporated, and it is thus possible for tropical countries to make use of them, and the Indian weather codes are again being revised so that they may be brought into conformity with the new arrangements.

Mention was made in last year's Report of the Indian Merchant Shipping (Amendment) Act, 1928, whereby the Government of India assumed closer control over the subjects of Shipping and Navigation, and divided the coasts of India for administrative purposes into six separate districts. The scheme entailed considerable rearrangements of personnel, including the appointment of a technical advisory staff for the Commerce Department of the Government of India, and a separation of function between officers employed by the Government of India and those employed by the Port Trusts. At Bombay the new arrangement has already been put into operation, the Government of India having appointed

a Principal Officer and a Nautical Surveyor, and the Port Trust having appointed its own Deputy Conservator in place of the original Port Officer and his Assistant; and the details concerning the appointments at the other major posts were under consideration at the close of the period under review. Moreover by means of the Bengal Pilot Service (Centralization of Administration) Act, 1929, which came into force on the 1st of April 1930, the control of the Pilot Service of the port of Calcutta has now been transferred from the provincial Government to the Government of India.

The problem of providing training for Indians as marine engineers has been engaging the attention of the Government of India for some years past; and as practical tuition in constructing and erecting marine engines cannot as a rule be obtained in India, the Government of India decided that if Indians are to have the chance of becoming fully qualified marine engineers, fitted to rise to the highest posts in their profession, they must be given facilities for study in the United Kingdom. Three technical State Scholarships, each worth £240 per annum, were accordingly granted with this object as a result of an examination held in July 1929, and the successful candidates left for England in the following September.

Towards the close of the year 1927, the Government of India was invited by His Majesty's Government to participate in an International Conference to be held in London in the autumn of 1928, to discuss the question of revising the International Convention of 1914 on the Safety of Life at Sea. The invitation was accepted, and Sir Geoffrey Corbett, K.B.E., C.I.E., I.C.S., lately Secretary to the Government of India, Department of Commerce, Captain E. V. Whish, C.B.E., R.I.M., Port Officer, Bombay, and Mr. M. A. Master, General Manager, Scindia Steam Navigation Co., Ltd., Bombay, were selected as delegates. The Conference opened in London on the 16th of April and terminated on the 31st of May, 1929, and adopted a revised Convention which was signed by the delegates appointed by the Government of India.

At the International Navigation Congress held at Cairo in 1926, it was suggested by the representatives of the Lighthouse Departments of certain countries that it would be advantageous if informal meetings between lighthouse authorities could take place periodically apart from the Navigation Congresses, and that the first of these meetings should be convened in London by the Cor-

poration of Trinity House. The Corporation accepted the suggestion, and at their invitation the Government of India deputed Mr. J. Oswald, B.Sc., M.I.C.E., Chief Inspector of Lighthouses in British India, to attend the Conference. The object of the Conference, which was held during July and August, 1929, was merely the exchange of ideas and technical information concerning lighting systems and lighthouse apparatus generally, and it had no authority to adopt resolutions liable to involve any country in a change of its existing system.

CHAPTER VI.

Commerce..

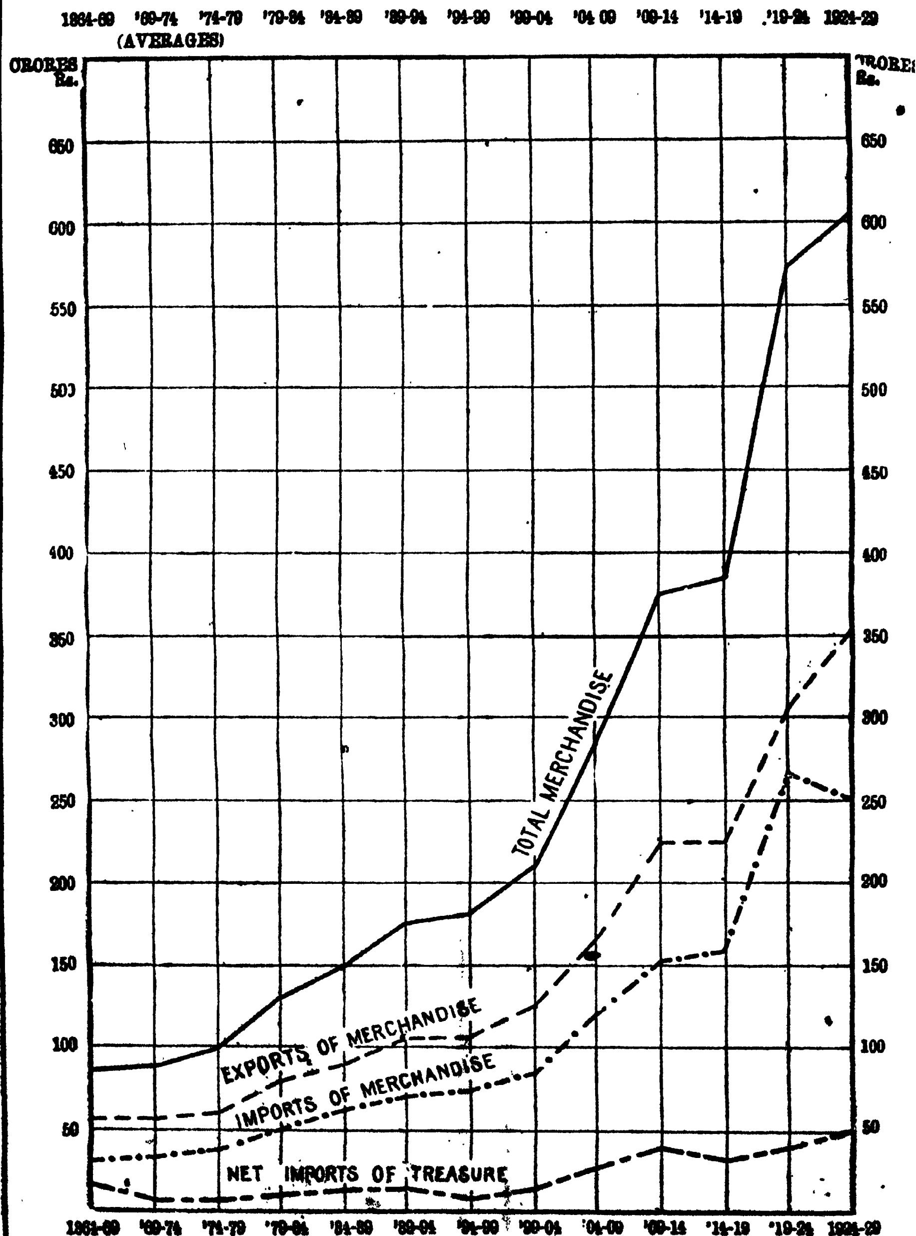
Detailed facts and figures concerning the course of India's trade necessarily take a long time to accumulate, and although a certain amount of information,—as we have seen elsewhere,—is available for the period officially covered by our Report,—that is to say up to March 1930,—full particulars can only be obtained, at the time of writing, for the calendar year 1928-29.

Trade is from at least one point of view the most fundamentally important of all the subjects with which we have to deal, since it was the cause of the original connection between Great Britain and India. And despite the fact that the Indian masses are, and have always been, deplorably poverty-stricken,—as we saw in Chapter IV,—it is nevertheless true, although at first sight paradoxical, that the commercial strength of the country as a whole is immense, even if incalculably less than it may some day become. Only on very rare occasions since organized commerce first began,—as for instance during the exceptionally difficult years 1920-21 and 1921-22,—have India's total exports been less than her imports; and during the last few centuries the balance of trade as against Europe has been consistently and substantially in her favour. Her enormous imports of bullion are of course proverbial, and have at times been so great as to cause serious monetary embarrassment to other countries, especially owing to her habit of absorbing and immobilizing a large proportion of what she acquires. Moreover the rapidity with which her overseas trade has expanded since the establishment of the British connection has been even more impressive than its original magnitude. Accurate figures for years much before the middle of last century are difficult to obtain, but the point is sufficiently brought out by the fact that whereas in 1850-51 the combined value of her exports and imports of merchandise and treasure amounted to Rs. 34 crores, in 1929-30 they had reached a total of Rs. 5,88 crores. It is a little difficult to reconcile such a development with the statement sometimes made by opponents of the existing administration that India has not prospered under it.*

* It should be noted that the figures for 1850-51 are not exactly comparable with those of 1929-30, for three reasons. Firstly, the area concerned was smaller in the earlier year; secondly, the method of collecting commercial statistics was altered under the Indian Sea Customs Act of 1878; and thirdly,

Foreign Sea-borne Trade of British India during the period between 1864-69 and 1924-29 (quinquennial averages)

(Private and Government)



Let us now set about considering some of the major influences which have affected the course of the country's overseas trade since the end of the period covered by the Chapter on Commerce in our previous Report, that is to say the calendar year 1927-28. Economic conditions throughout the world in general during 1928 were becoming gradually more stabilized, and the state of industry and trade seemed to be slowly improving. An important ameliorating influence was the fact that within the 12 months no less than nine countries achieved definite stabilization of their currencies. Throughout the year the trend of prices was slightly downwards; this tendency, however, became much more marked during 1929, and in conjunction with the unprecedented financial crises which occurred in London and New York, induced a world-wide recession in the volume of trade whose repercussions in India have been serious. During both 1928 and 1929 the rupee exchange remained fairly steady, the maximum and minimum rate having been 1*s*. $6\frac{2}{32}$*d* and 1*s*. $5\frac{3}{4}$*d*. Bank rate in India throughout the two years, however, showed some fluctuations, having fallen from 7 per cent. to 5 per cent. during the earlier part of 1928, risen again to 7 per cent. at the end of the year, continued its rise to 8 per cent. in February 1929, fallen again to 5 per cent. by June, and then remained between 7 and 6 per cent. from October 1929 until the beginning of April 1930, when a period of cheaper money seemed in prospect. The price of Government of India $3\frac{1}{2}$ per cent. paper declined considerably during the two years; taking April 1st as our standard date, the quotation was Rs. 75-6 in 1928, Rs. 71-5 in 1929, and in 1930 Rs. 68-13, which is lower than it has been since 1926. The maximum post-war value was reached in 1927 at Rs. 78-11.

We may proceed now to examine in closer detail the questions of the balance and direction of trade; and since the reader has already been provided, in Chapter I, with a summary of such facts as are available concerning the year ending with the month of March 1930, which it would be waste of time to recapitulate here, we may set about giving particulars for the year 1928-29 forthwith. The visible balance of trade in merchandise and treasure for the period was in favour of India to the extent of Rs. 52 crores, as

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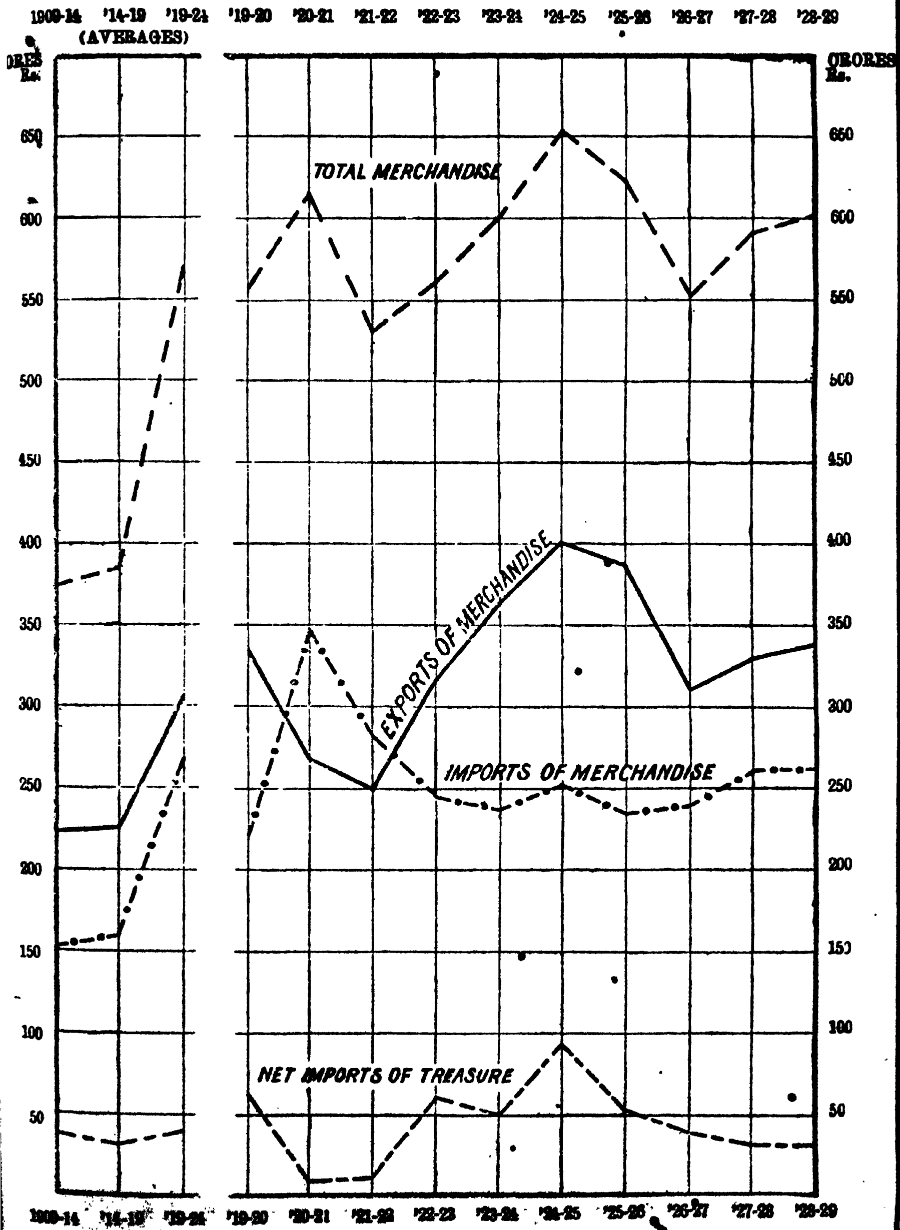
substantial changes in prices occurred between the two years. Nevertheless the increase in the value of the country's overseas trade has undoubtedly been immense.

compared with Rs. 50 crores in the preceding year and the record figure of Rs. 109 crores in 1925-26. The net imports of treasure rose from Rs. 32 crores to Rs. 34 crores. The total value of the imports of merchandise advanced by Rs. 3 crores to Rs. 2,53 crores, while that of exports rose by Rs. 9 crores to Rs. 3,38 crores. The most striking change in the distribution of the import and export trades during the year was the decline in the share of the United Kingdom, which fell in respect of imports from 47·7 per cent. in 1927-28 to 44·7 per cent. in 1928-29, and in respect of exports from 25 per cent. to 21·4 per cent. The share of the Dominions and other British Possessions in the import trade rose from 6·9 per cent. to 9·4 per cent.,—largely as a result of an exceptional demand in India for wheat,—and in the export trade it declined from 15 to 14 per cent. The whole British Empire had 43·5 per cent. of the total trade as compared with 46·3 per cent. in 1927-28. Smaller receipts of mineral oils from the United States accounted for a drop in her share in imports from 8·2 to 6·9 per cent. while her participation in the export trade increased from 11·1 to 11·8 per cent. Japan's share in imports slightly receded to 7 per cent. but her share in exports recovered from 8·9 per cent. to 10·2 per cent., owing chiefly to larger purchases of Indian cotton. The share of Germany in imports slightly advanced to 6·3 per cent., but in exports it fell from nearly 10 per cent. to 9·6 per cent. Belgium's share in imports remained practically unchanged at approximately 3 per cent., while her share in exports increased to 4 per cent. from 3·3 per cent. in 1927-28. Both France and Italy participated to a larger extent in the import as well as in the export trade, while the share of the Netherlands remained almost stationary at 1·9 per cent. under imports and 2·5 per cent. under exports.

So much for the individual positions of the various competing countries. Let us now examine the direction of trade in the more important commodities. The major fact is that the United Kingdom is threatened with competition in almost every line, including those which have hitherto been regarded as preponderantly British. In iron and steel the recovery she made in 1927-28 proved short-lived, and her share dropped from 67·7 per cent. to 64·5 per cent. in 1928-29, while Belgium improved her position from 17·9 to 20·1 per cent. In machinery and millwork the share of the United Kingdom fell during the year under review from 78·6 to 76·8 per cent., while there was a gain in the share of the United

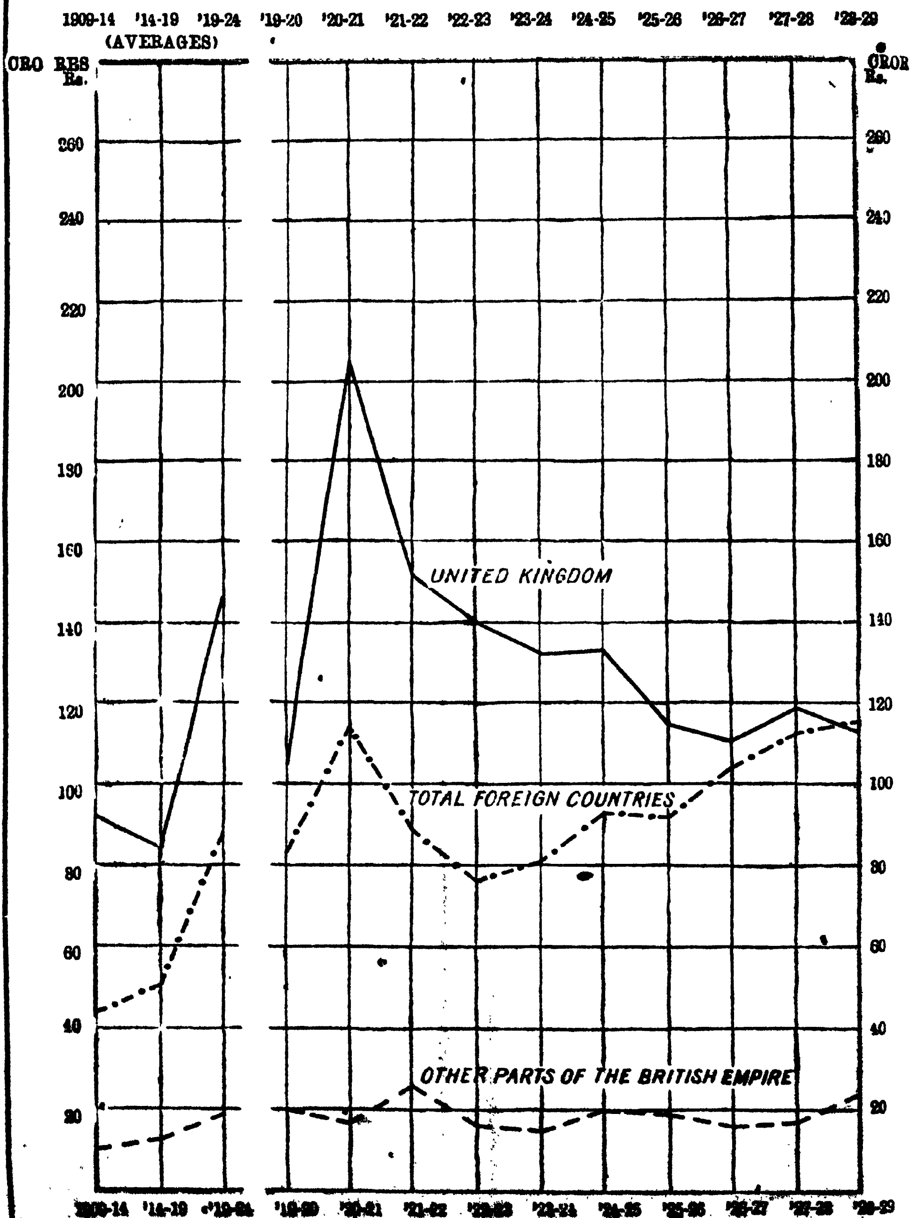
Foreign Sea-borne Trade of British India during the last ten years as compared with averages of the Pre-war, War and Post-war periods

(Private and Government)



Variations in the Trade of British India with principal countries during t last ten years as compared with averages of the Pre-war, War and Po war periods.

IMPORTS.



States from 9·9 to 11·3 per cent. Germany and Japan improved their positions in the trade in hardware at the expense of the United Kingdom, whose share declined from 39 to 36 per cent. In motor vehicles, intensified American competition led to a decrease by over 6 per cent. in the United Kingdom's share from 27·5 to 20·9 per cent., while the United States and Canada accounted for 47 and 25·4 per cent. in the trade as compared with 41·3 and 20 per cent. respectively in the preceding year. The United Kingdom accounted for 71 per cent. of the trade in cotton manufactures as compared with 72 per cent. in 1927-28 and 90 per cent. in the pre-war year, while Japan, Italy and China increased their shares. The United States decreased her contribution in mineral oils from 44·2 to 24·5 per cent., and the share of Borneo also fell, while there was a considerable increase in the participation of Russia and Persia in this trade. On the export side, the United Kingdom's share in the tea trade fell from 87·5 per cent. to 84 per cent., while other consumers of Indian tea, with the exception of the United States which obtained her supplies through the United Kingdom, claimed a larger share than in 1927-28. As in the preceding year, Germany absorbed about 28 per cent. of the exports of raw jute compared with 22 per cent. in 1913-14. Next came the United Kingdom with 23·4 per cent. as compared with 25 per cent. in 1927-28, while the United States, France, Italy and Belgium appreciably advanced their positions. Japan and China together accounted for 54·8 per cent. of the total export of raw cotton as compared with 50·3 per cent. in the preceding year. The share of Italy fell from 12·3 to 10 per cent. and of Germany from 9·3 to 8·6 per cent., while that of the United Kingdom and Belgium increased. In oilseeds France and the Netherlands took greater shares of the considerably increased total exports while the shares of the United Kingdom, Germany and Belgium decreased. Under foodgrains, with the exception of Ceylon and the Straits Settlements, all the principal importing countries decreased their shares.

The remarkable change which has taken place in the position of the British Empire with regard to the import trade into India within comparatively recent times, is strikingly brought out if we consider the figures of a representative pre-war year in relation to those of the year under review. From these we see that while there has in fact been an increase in the total imports of the

British Empire into India, it has been markedly less than that of foreign countries. Thus in 1913-14 the total imports from the British Empire were valued at Rs. 128 crores and those of foreign countries at Rs. 55 crores; but in 1928-29, while British Empire imports had increased in value to Rs. 137 crores those from foreign countries has risen to Rs. 116 crores. Thus despite an increase in value of Rs. 9 crores the share of the British Empire in the total import trade had declined from 70 to 54 per cent. From the broad historical point of view this disproportion between the increases in the shares of the British Empire and the rest of the world in the import trade of India is undoubtedly the most important and fundamental fact to bring to the reader's attention.

Having now indicated the major influences which have affected India's commerce during recent years, and described the balance and direction of trade in 1928-29, we must turn to consider the changes which have taken place since the publication of our last Report in the actual values and quantities of the more important items of import and export. First we will devote a few paragraphs to a general summary of these changes, and then settle down to a closer description of the year's transactions in each of the more valuable commodities. The tables reproduced below and overleaf should enable the reader to see at a glance the relative importance of the major items of commerce, and the changes which have taken place in their respective positions during recent years.

Table of Imports.

In thousands of Rupees

——	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	Percentage proportion to total imports of merchandise in 1928-29.
Imports.						
1. Cotton and cotton goods	86,57,25	69,31,26	70,08,13	71,90,16	67,15,16	26·51
2. Metals and ores	26,55,19	25,40,48	23,86,12	28,41,68	26,98,84	10·65
3. Machinery and millwork	14,74,07	14,88,59	13,63,14	15,93,75	18,36,04	7·25
4. Sugar	20,66,97	15,58,41	18,89,06	14,90,55	16,08,95	6·35
5. Oils	9,69,49	10,60,16	9,18,78	11,08,68	11,53,23	4·55
6. Vehicles	4,41,91	5,74,89	6,39,93	7,69,37	11,00,60	4·34
7. Grain, pulse and flour	10,41	65,77	91,69	2,30,70	10,72,81	4·24
Total	...	...	...	...	...	153·89

Table of Exports.

In thousands of Rupees.

—	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	Percentage proportion to total imports of merchandise in 1928-29.
Exports.						
1. Jute { raw	29,09,30	37,94,57	26,78,04	30,66,26	36,34,92	9·80
manufacture	51,76,66	58,83,98	53,18,09	53,56,48	56,90,49	17·24
2. Cotton { raw & waste	91,96,30	95,91,42	59,14,19	48,19,53	66,69,10	20·20
manufacture	11,27,48	9,64,85	10,74,85	8,67,23	7,79,56	2·36
3. Grain, pulse and flour	65,06,04	48,03,39	39,24,90	42,92,03	33,69,42	10·21
4. Seeds	33,16,85	29,63,68	19,08,77	26,69,30	29,62,52	8·97
5. Tea	33,39,24	27,12,17	29,03,77	32,48,49	26,60,44	8·06
6. Hides and skins { raw	6,77,41	7,23,38	7,17,97	8,80,94	9,55,98	2·90
tanned	7,28,87	7,10,21	7,37,69	9,07,27	9,30,74	2·82
7. Metals and ores	7,18,92	7,28,83	7,20,86	8,97,08	8,91,63	2·70
8. Lac	7,55,96	6,90,10	5,47,24	6,98,86	8,64,26	2·62
Total	..	...	...	...	...	87·88

As regards imports, cotton and cotton goods of course formed, as before, by far the most valuable individual group, and accounted for no less than 26·51 per cent. of the total. During the year the trade weakened slightly, the imports having decreased in amount by 37 million yards to 1,937 million yards, and in value by Rs. 1,32 lakhs to Rs. 53,81 lakhs. Grey goods, imports of which amounted to 839 million yards valued at Rs. 20,19 lakhs, declined by 37 million yards in quantity and Rs. 1,06 lakhs in value, owing primarily to a remarkably heavy reduction in the off-take of bordered grey goods. White goods fell off slightly from 556 million yards to 554 million yards, their value declining from Rs. 15,42 lakhs to Rs. 15,34 lakhs. Under coloured, printed or dyed goods, the trade showed a small expansion from 505 million yards to 507 million yards, although the value shrank from Rs. 17,52 lakhs to Rs. 17,35 lakhs. Imports of cotton twist and yarn receded from 52 million lbs. to 44 million lbs. owing chiefly to a curtailment of the requirements of the Bombay mills. Among other textiles, artificial silk (including yarns and manufactures) declined from Rs. 5,49 lakhs to Rs. 4,77 lakhs. The value of imports of raw and manufactured silk also fell off from Rs. 5,06 lakhs to Rs. 5,01 lakhs, and that of imports of wool and woollens from

Rs. 5,37 lakhs to Rs. 5,02 lakhs. Imports of sugar, including molasses, were stimulated by the low prices ruling in the world market and reached 937,000 tons valued at Rs. 16,09 lakhs, an advance of 114,000 tons in quantity and of Rs. 1,18 lakhs in value. There was a weakening of demand for iron and steel manufactures, imports of which declined from 1,197,000 tons to 1,170,000 tons in quantity and from Rs. 21,44 lakhs to Rs. 20,24 lakhs in value. The year's imports of machinery and millwork (which, under the new system of classification adopted in April 1928, includes railway locomotives and tenders and parts) were valued at Rs. 18,36 lakhs; the value of identical items for 1927-28 worked out at Rs. 16,92 lakhs. The increased use of motor vehicles in India was reflected in larger imports, the value of the trade increasing from Rs. 6,17 lakhs to Rs. 7,72 lakhs. Concurrently with this there was a complementary increase in the import value of rubber manufactures, which rose from Rs. 2,71 lakhs to Rs. 2,86 lakhs. Imports of hardware were valued at Rs. 5,23 lakhs, which showed a very small decline of Rs. 1 lakh. In spite of a decline in the absorption of fuel oils in the Bombay mills, imports of mineral oils rose in quantity from 232 million gallons to 242 million gallons, the value increasing from Rs. 10,44 lakhs to Rs. 10,70 lakhs. Imports of kerosene oil advanced from 94 million gallons valued at Rs. 5,39 lakhs to a new record of 105 million gallons valued at Rs. 5,76 lakhs, part of this increase being attributable to the price-cutting war in the Indian markets during the early quarter of the year. The value of provisions receded from Rs. 6,41 lakhs to Rs. 6,21 lakhs, the most important single cause for the decline being a reduction in the prices of vegetable products under the pressure of competition. Imports of raw cotton declined from 66,000 tons valued at Rs. 6,74 lakhs, to 29,000 tons valued at Rs. 3,90 lakhs, owing to decline in the consumption of the Bombay mills. Imports of liquors declined from 7,118,000 gallons valued at Rs. 3,67 lakhs to 6,790,000 gallons valued at Rs. 3,57 lakhs. Receipts of paper and pasteboard increased in quantity from 2,089,000 cwts. to 2,313,000 cwts. and in value from Rs. 3,01 lakhs to Rs. 3,30 lakhs. An abnormal development in the import trade of the year was the remarkable increase in the imports of wheat which rose in quantity from 69,000 tons to 562,000 tons, and in value from Rs. 1,09 lakhs to Rs. 8,17 lakhs, owing to the shortage of the local crop in India.

Coming now to exports, the value of the most important item, namely raw and manufactured jute, rose from Rs. 84 crores to Rs. 89 crores. Shipments of raw jute increased in quantity by 6,000 tons to 898,000 tons and in value by Rs. 1,69 lakhs to Rs. 32,35 lakhs. Under jute manufactures, gunny bags advanced from 463 millions valued at Rs. 23,27 lakhs to 498 millions valued at Rs. 24,93 lakhs in response to the increased demands made by the sugar and wheat trades of the world, and gunny cloth rose from 1,553 million yards to 1,568 million yards in quantity and from Rs. 29,94 lakhs to Rs. 31,64 lakhs in value. There was an improvement of Rs. 17,62 lakhs in exports of raw and manufactured cotton, the total value having been Rs. 74,49 lakhs. Raw cotton advanced by 38 per cent. in quantity from 480,000 tons to 663,000 tons, and by 39 per cent. in value from Rs. 47,72 lakhs to Rs. 66,25 lakhs, as a result of the long drawn out mill strike in Bombay, which reduced the home demand and depressed Indian prices in comparison with the prices of American cotton, thus turning the parity in favour of India and encouraging exports. On the other hand of course the strike was responsible for a reduction in the exports of cotton manufactures, which decreased in value by about 10 per cent. from Rs. 8,67 lakhs to Rs. 7,80 lakhs. There were violent changes during the year in the export trade in foodgrains and flour, which showed a decline from 2·8 million tons valued at Rs. 42,92 lakhs to 2·3 million tons valued at Rs. 33,69 lakhs. Under rice alone, shipments of which amounted to 1·8 million tons valued at Rs. 26,47 lakhs, there was a reduction of 369,000 tons in quantity and of Rs. 7,54 lakhs in value, as a result of the smaller exportable surplus of Burma, the two successive bumper crops in the important rice-exporting regions of Indo-China and Siam, and the prohibition of imports into Japan. There was also a marked decline in shipments of wheat, which fell from 300,000 tons to 115,000 tons in quantity and from Rs. 4,41 lakhs to Rs. 1,69 lakhs in value. The adverse position in the world's tea trade caused a decline in the value of shipments from Rs. 32,48 lakhs to Rs. 26,60 lakhs, although the quantity exported only decreased from 362 million lbs. to 360 million lbs. The value of shipments of oilseeds advanced from Rs. 26,69 lakhs to Rs. 29,63 lakhs, owing primarily to a steady development of the trade in groundnuts, which expanded in bulk from 613,000 tons to 788,000 tons. In spite of the depression in the leather industries of the United

Kingdom and Germany, there was considerable vitality in the Indian trade in hides and skins, exports of which were valued at Rs. 9,56 lakhs as compared with Rs. 8,81 lakhs in 1927-28. The trade in lac improved substantially, shipments having risen from 544,000 cwts. at Rs. 6,99 lakhs to 743,000 cwts. valued at Rs. 8,64 lakhs. There was also an appreciable improvement in exports of raw wool, the value rising from Rs. 4,36 lakhs to Rs. 4,89 lakhs. Among less important items, there was an interesting development in respect of oilcakes, exports of which swelled in value from Rs. 2,53 lakhs in 1926-27 to Rs. 3,14 lakhs in 1927-28 and Rs. 3,84 lakhs in the year under review.

There were some unfortunate movements in the re-export trade during the year, its value declining from Rs. 9,54 lakhs to Rs. 7,83 lakhs. As the bulk of the re-export trade usually passes through Bombay, the effect of the decline was naturally confined chiefly to that province. The chief cause of it was the reduction in the shipments of non-Indian raw cotton from 2,790 tons valued at Rs. 44 lakhs to 500 tons valued at Rs. 9 lakhs, and in those of foreign cotton manufactures (including twist and yarn) from Rs. 1,22 lakhs to Rs. 76 lakhs in value,—as a result, chiefly, of the establishment in East Africa of Japanese organizations which combine the selling of Japanese cotton textiles with the purchasing of African (Uganda) cotton. Among other contributory causes was the falling off in re-exports of sugar from 15,500 tons valued at Rs. 44 lakhs to 4,000 tons valued at Rs. 11 lakhs, and in those of raw skins from 429 tons to 323 tons valued at Rs. 1,92 lakhs and Rs. 1,53 lakhs respectively.

We will now examine the main features of the trade in each of the larger groups of imports during the year, taking cotton goods,—the most important,—first. As we have seen, there was some decline in the value of all classes of cotton imports,—that is, in grey, white, and coloured goods, and in twist and yarn. As regards the last of these, a contributory cause for the decline,—apart from the Bombay strike,—can be found in the fact that the Indian mills have been gradually increasing their own production of yarns of 31-40 counts, and this would naturally tend to reduce imports of yarn of these counts. The decrease in the imports of piecegoods is more difficult to explain. In the first place it may be noted that the decline in quantity was not really very great, amounting to 37 million yards out of a total of nearly 1,937

million yards, or less than 1·9 per cent. Further, the quantity of piecegoods imported in 1927-28 was a record, and the imports during the year under review exceeded the quantity imported in 1926-27 by nearly 150 million yards. Thus, if the year's imports are viewed in relation to those of other post-war years, they may be considered fairly satisfactory, and the slight falling away from the 1927-28 record is scarcely abnormal. Nevertheless it should be noted that what may be described as the psychological background of the trade was far from satisfactory. The Lancashire industry was depressed and in the throes of reconstruction. Moreover throughout the year Manchester prices were altering rapidly from month to month in sympathy with the price of American cotton, which fluctuated from about 9·79*d.* per lb. in February 1928 to 12·53*d.* in July, when it began to sag, reaching 9·84*d.* in September; from then onwards it had an upward tendency, and stood at about 11·14*d.* in March 1929. While this instability in prices remained, business was difficult and dealers were chary of offering any prices except those which were distinctly favourable to them, while on the other hand, manufacturers were afraid to accept rates which might prove insufficiently remunerative. This uncertainty about prices undoubtedly contributed to the weakness in the import trade. Another factor whose effect was probably felt this year, was the embargo placed by the Marwari Chamber of Commerce, Calcutta, on the imports of white goods in certain months of the year. The effect of this step cannot of course be measured quantitatively. The decline in the imports of white goods was a bare 2⅓ million yards and, if this was the only effect of the embargo, it might be considered to have been ineffective in checking imports. But a fact which may be noted in this connection is that, although the declared values per yard of both grey and coloured goods declined, the corresponding value of white goods remained the same as in the preceding year, and probably the control of imports by one of the most influential Chambers in the import line was responsible for stopping a sympathetic decline in the price of white piecegoods. The influence on the import trade of the serious and protracted strike in the Bombay mills, which lasted for nearly six months of the year, was not as pronounced as might have been expected, owing to the fact that exceptionally heavy stocks were held at the begin-

ning of the year; as the year advanced, however, the demand from Bombay quickened and good sales were recorded in November and December. Had it not been for the strike the imports of piece-goods would of course in all probability have shown a greater decline than they did. Another factor contributing to the general uncertainty was the boycott agitation started at the end of the year under review. It is difficult to estimate its effect, because it started at the end of the period for which detailed figures are available. But as the market report from Manchester as well as from India showed, dealers were somewhat perturbed by it, and this factor undoubtedly added to the difficulties of the market and made dealers unwilling to place orders on a large scale at the end of the year. A further factor which tended to reduce imports was the lower buying capacity of the ryot as a result of the cold weather and frost which damaged the crops at the end of January. The effect of this will probably be more distinctly seen in the figures for 1929-30, but, to some extent, it also affected the imports at the end of 1928-29. Other factors of minor importance which contributed to the decline in imports were the closing of the markets in Bombay during the serious communal riots in February, the high money rates of February, and, lastly, the deadlock in January between the Marwari and Bengalee dealers in Calcutta, which lasted for six weeks and greatly affected the trade in Calcutta. It is not possible to estimate quantitatively the effect of these various factors, but it cannot be denied that they tended to reduce the imports of cotton piecegoods.

A detailed statement of figures concerning the year's import trade in cotton goods is now desirable; we will consider twist and yarn first and the various kinds of piecegoods afterwards. The imports of twist and yarn during the year amounted to 43·8 million lbs. in quantity and Rs. 6,29 lakhs in value, as compared with 52·3 million lbs. and Rs. 6,79 lakhs in 1927-28. Thus there was a decrease of 8·5 million lbs. in quantity and Rs. 50 lakhs in value. Of the total imports, 23·1 million lbs. came from the United Kingdom, 11·4 million lbs. from China and 7·6 million lbs. from Japan. The imports from these countries in 1927-28 were 20·6, 12·9 and 17 million lbs. respectively. Thus it will be seen that while the imports of the United Kingdom increased by 2½ million lbs., imports from China declined by about 1½

million lbs. and from Japan by 9·4 million lbs. As far as value is concerned, however, the trade with China showed an increase of over Rs. 7 lakhs. It is interesting to note that during recent years the United Kingdom and China have on the whole been sending more and more yarn to India, whereas imports from Japan are declining rapidly. In 1927-28 imports from Japan decreased by about 10 million lbs. At the same time imports from China increased by about 12 million lbs. Other sources of imports of yarn to India included Italy and Switzerland. There were no imports at all from the Netherlands during the year.

The total quantity of yarn imported is of course small as compared with the amount produced in India, but during the year the production of Indian mills declined to 648 million lbs., as compared with 809 million lbs. in 1927-28 and 807 million lbs. in 1926-27,—largely of course as a result of the strike in Bombay. As regards the different classes of yarns, the production of counts 1-20 in Indian mills declined by 113 million lbs. to 382 million lbs. as compared with 1927-28, while imports of these counts also showed a substantial decline, the figure being 1,098,000 lbs. for the year under review and 2,465,000 lbs. in 1927-28. In counts 21-25, production decreased by about 42 million lbs. and imports increased from 416,000 to 548,000 lbs. In counts 26-30, production declined by 8 million lbs., whereas imports were nearly half what they were during the previous year. Under counts 31-40, imports declined from 27 million lbs. to 20 million lbs., whereas production increased from 33·8 million lbs., to 37·5 million lbs. It appears that the Indian mills are increasing their production of yarn under these counts and this, combined with the lesser consumption on account of the mill strike, explains the great decline of 7 million lbs. in imports. In counts above 40*s*., production showed a decline of over a million lbs., whereas imports showed an increase of 1·3 million lbs. The imports in 1928-29 were 9·3 million lbs. As regards two-folds (doubles), the imports declined by about a million lbs. from 15·6 to 12·6 million lbs. There is not space for us to examine the shares which the three chief exporting countries have of the trade in the different classes of yarns; but the main facts of the total import trade in cotton twist and yarn during the year are that the share of the United Kingdom increased from 39 per cent. to 53 per cent., that Japan's share

fell from 32 per cent. to 17 per cent., (having been as much as 65 per cent. in 1925-26), and that China's share remained practically constant around 26 per cent.

We now come to consider the trade in cotton piecegoods. During the year the total imports of piecegoods, including fents, decreased by the relatively small amount of 37 million yards as compared with 1927-28. The decrease in value, however, was considerable, being Rs. 1,32 lakhs. Compared with the pre-war year 1913-14, the imports of 1928-29 were less by over 1,260 million yards. The decline in the quantity of grey goods imported during the year, as compared with 1927-28, was wholly confined to bordered grey goods and the imports of plain grey goods actually increased by over 3 million yards. Imports of white and coloured goods were in the aggregate at approximately the same level as in 1927-28, white goods declining by about 2½ million yards, and coloured increasing by about 2 million yards. As far as value is concerned, the imports of grey goods declined by about Rs. 1 crore, white goods by Rs. 8 lakhs, and coloured goods,—in spite of the slight increase in quantity,—by about Rs. 18 lakhs. The large increase in the volume of the imports of printed goods indicated in last year's Report tended to continue into the year 1928-29, although the increase was not so great as in 1927-28. The total quantity imported in 1928-29 was 244·4 million yards as compared with 235·3 million yards in 1927-28. Owing to the decline in prices, however, the total value was Rs. 7,41 lakhs as compared with Rs. 7,53 lakhs in 1927-28.

The position of the various countries competing for the import of cotton piecegoods into India can be summarized as follows. The United Kingdom's share in the imports of grey goods during the year decreased from 651 million yards to 582 million yards. The Japanese share, on the other hand, increased from 215 million yards to 242 million yards. The imports from China (including Hongkong) advanced from 7 million to 13 million yards, but the share of the United States declined from 2·2 million to 1·6 million yards. White goods were, as usual, imported chiefly from the United Kingdom, which shared to the extent of 525 million yards in a total of 554 million yards; in 1927-28 her share was 527 million yards out of a total of 556·5 million yards. Switzerland's share decreased from 12 million yards to 9 million yards, whereas

the share of the Netherlands increased by about 1 million yards. Japan exported nearly the same amount as in the preceding year. The British share of the imports remained practically constant, only slightly increasing from 94·7 per cent. to 94·8 per cent. In the imports of coloured, printed or dyed piecegoods the United Kingdom's share fell by about 17 million yards to 336 million yards. Imports from Italy have been increasing, as was noted last year, and in 1928-29 they stood at 36 million yards as compared with 24½ million yards in the previous year. The imports from Japan also showed a small increase from 103 million yards to 110 million yards. The share of the Netherlands again slightly declined from 12 to 11 million yards.

The percentage shares in 1913-14 and in the past five years of the United Kingdom and Japan, the two principal competitors in the Indian piecegoods import trade, in each of the three important classes of piecegoods, and also the percentage shares of all the principal importing countries in the total quantities of imported piecegoods, are set forth in tables below, whose outstanding feature will be seen to be the definite and continuous trends in opposite directions of the percentage figures of the United Kingdom and Japan during the past seven years.

Percentage shares of the United Kingdom and Japan in the imports of cotton piecegoods.

—	1913-14.		1924-25		1925-26.	
	United Kingdom.	Japan.	United Kingdom.	Japan.	United Kingdom.	Japan.
Cotton piecegoods :—						
Grey	98·8	·5	86·0	13·0	79·2	20·1
White	98·5	...	97·1	·8	96·0	1·0
Coloured	92·6	·2	83·1	10·0	73·1	19·0

—	1926-27.		1927-28.		1928-29.	
	United Kingdom.	Japan.	United Kingdom.	Japan.	United Kingdom	Japan.
Cotton piecegoods :—						
Grey	78·7	20·7	74·4	24·5	69·4	28·8
White	96·4	·5	94·7	1·0	94·8	1·1
Coloured	71·1	19·2	69·8	20·3	66·2	21·7

Percentage shares of different countries in the total quantities of piecegoods imported.

—	1913-14.	1920-21.	1921-22.	1922-23.	1923-24.
United Kingdom	97·1	85·6	87.6	91·2	88·8
Japan	·3	11·3	8·3	6·8	8·2
United States	·3	·9	2·1	·5	·5
Netherlands	·8	·9	1·1	·8	·7
Other countries	1 5	1·3	·9	·7	1·8
Total	100	100	100	100	100

—	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
United Kingdom	88·5	82·3	82·0	78·2	75·2
Japan	8·5	13·9	13·6	16·4	18·4
United States	·5	1·0	·9	1·4	1·5
Netherlands	·6	1·1	1·1	1·0	1·0
Other countries	1·9	1·7	2·4	3·0	3 9
Total	100	100	100	100	100

An analysis of the total quantity of piecegoods imported into India during 1928-29 shows that 43·5 per cent. was received in Bengal as compared with nearly 50 per cent. received in 1927-28. Bombay, on the other hand, increased her share from about 23 per cent. to about 27 per cent. Similarly Sind and Madras also considerably increased their imports. Burma showed a slight decline. Imports of raw cotton into India of course declined substantially during the year, owing to the strike in Bombay and the fact that Indian prices were below parity as compared with American. From 370,000 bales valued at Rs. 6·74 crores in 1927-28 the imports went down to 162,000 bales valued at Rs. 3·90 crores. Supplies of American cotton from the United States declined from 279,000 bales valued at Rs. 4·37 crores to 66,000 bales valued at Rs. 1·38 crores. On the other hand however supplies from Kenya Colony increased from 73,000 bales valued at Rs. 2 crores to 84,000 bales valued at Rs. 2·23 crores.

Metals and manufactures of metals come next in order of value in the list of India's imports, and represent 10·65 of the total; and were such items as are grouped under the heading of machinery and millwork, and which come next on our list, included with metals and manufactures thereof, their combined percentage value would amount to 17·9 and would thus not fall very far short of the most important item of all, with which we have just been dealing.

During the year under review the imports of metals and manufactures of metals declined by 2 per cent. from 1,259,000 tons to 1,232,000 tons, and their value from Rs. 28,50 lakhs to Rs. 27,00 lakhs. Manufactured iron and steel was of course by far the largest item under this head, the imports for 1928-29 having amounted to 1,165,000 tons. This was less by 25,000 tons than the imports for the previous year, which were the highest ever recorded,—and the value accordingly declined from Rs. 21,37 lakhs to Rs. 20,19 lakhs. Galvanized sheets, which amounted to 35 per cent. of the total value of manufactured iron and steel imported, fell from the preceding year's record figure of 332,000 tons valued at Rs. 8,06 lakhs to 326,000 valued at Rs. 7,11 lakhs. The United Kingdom leads the world in this trade, and the amount she imported into India during the year totalled 286,000 tons valued at Rs. 6,26 lakhs as compared with 298,000 tons valued at Rs. 7,24

lakhs. The value of imports from the United States declined from the small figure of Rs. 16 lakhs in the preceding year to Rs. 8 lakhs. The supplies from Belgium, however, have been steadily rising, the figures being 10,000 tons valued at Rs. 25 lakhs in 1926-27, 22,000 tons valued Rs. 49 lakhs in 1927-28, and 32,000 tons valued at Rs. 65 lakhs in the year under review. Imports of tin-plates increased from 24,000 tons valued at Rs. 78 lakhs to 27,000 tons valued at Rs. 86½ lakhs during the year, the chief importing countries being the United Kingdom and the United States; the former's share fell from Rs. 53 lakhs to Rs. 45 lakhs, while the latter's rose from Rs. 25 lakhs to Rs. 41 lakhs. With the object of stabilizing prices and eliminating needless competition in overseas markets an agreement was arrived at in 1928 between the tinplate manufacturers in South Wales and those in the United States, whereby the combined tinplate exports of the two countries were shared in the proportion of 70 per cent. for the United Kingdom and 30 per cent. for the United States. Imports of sheets and plates, not galvanized or tinned, remained fairly steady at 80,000 tons valued at Rs. 1,08½ lakhs. The share of the United Kingdom advanced from 44,000 tons valued at Rs. 66 lakhs, to 54,000 tons valued at Rs. 78 lakhs, while that of Belgium dropped from 31,000 tons valued at Rs. 36 lakhs, to 24,000 tons valued at Rs. 28 lakhs. Imports of steel bars, other than cast steel, declined from 181,000 tons to 170,000 tons in quantity but rose in value from Rs. 1,84 lakhs to 1,92 lakhs; Belgium, Luxemburg and Germany together supplied India with 110,000 tons as against 147,000 tons in the preceding year, and the supplies from the United Kingdom and France advanced from 23,000 and 9,000 tons to 47,000 and 12,000 tons respectively. Imports of beams, pillars, girders, and bridgework declined from 144,000 tons to 136,000 tons in quantity and from Rs. 1,82 lakhs to Rs. 1,64 lakhs in value, the decrease being chiefly due to smaller imports from Belgium, which amounted to 45,000 tons against 59,000 tons in the preceding year. The imports from the United Kingdom and France both rose slightly, the one from 63,000 to 68,000, and the other from 16,000 to 21,000 tons. Rails, chairs, and fishplates (including those for railways) which were imported mostly from the United Kingdom, decreased from 113,000 tons valued at Rs. 1,35 lakhs to 48,000 tons valued at 61 lakhs.

Although India's imports of manufactured iron and steel declined during the year, the world's production of pig iron, estimated at 88 million tons, and of steel, at 110 million tons, constituted a record, to which the United Kingdom contributed 6½ million tons and 8½ million tons respectively, these being 9 and 6 per cent. less than the corresponding figures of 1927. Compared with 1913, the world production of pig iron in 1928 was greater by 14 per cent., but that of the United Kingdom had proportionately declined by 36 per cent.; and as regards steel, although the United Kingdom produced 11 per cent. more than in 1913, world production had increased by 47 per cent. The United Kingdom has in fact not been able to keep pace with the increasing production in other countries, especially in Europe, which enjoy the advantages of lower wages and longer working hours; but the stress of competition has recently led her to lower her prices in an attempt to maintain her position as the largest supplier of iron and steel materials to India. Imports of pig iron into India during the year amounted to 3,160 tons as compared with 5,100 tons in 1927-28, but these figures included over 1,000 tons of ferro-alloys, such as ferro-manganese, ferro-silicon, etc., which for statistical purposes are recorded under this head. British India actually no longer requires to import foreign pig iron, as her requirements are now met from her own resources. Her production in 1928-29 was 1,050,000 tons, and the decrease of 112,000 tons over the preceding year is mainly attributable to the suspension of work in the Tata Iron and Steel Works owing to the labour troubles. In spite however of the fact that the United Kingdom's production of iron and steel is declining relatively to that of other countries, her imports into India in 1928-29 nevertheless exceeded those in any year except 1927-28, and aggregated 650,000 tons or 55·5 per cent. of the total as compared with 685,000 tons or 57·2 per cent. in 1927-28. In 1913-14 her contribution was only 609,000 tons, but this represented 59·8 per cent. of the total. The supplies from Belgium are steadily on the increase, though still a long way below those from the United Kingdom, and rose during the year by 5 per cent. from 316,000 tons to 333,000 tons, her share in the total trade thus improving from 26·4 per cent. to 28·5 per cent. The share of Germany, notwithstanding her efforts to economise by "rationalization" and in other ways, dropped from 7

to 6 per cent., largely as a result of the Swedish miners' strike, which deprived her of her chief supplies of ore. France, and to a lesser extent the United States, increased their shares in the trade. Imports of metals other than iron and steel rose slightly in quantity from 62,100 tons to 62,400 tons, but fell in value from Rs. 6,96 to Rs. 6,74 lakhs. The quantities of brass, copper, zinc, German silver, and quicksilver imported increased, whereas those of aluminium, lead, and tin declined.

Last year, the general heading machinery and millwork, which came third in importance in the list of imports, did not include railway locomotives and tenders and parts, but this year, as a result of a re-arrangement in the classification, they have been brought in, and consequently the total figures for imports of machinery and millwork in 1928-29, namely Rs. 19,43 lakhs, are not strictly comparable with the imports recorded in 1927-28 which were valued at Rs. 16,99 lakhs. If we leave out of account Rs. 96 lakhs, the value of the locomotives and parts, the actual gain in the value of the imports in 1928-29 is reduced to Rs. 1,48 lakhs. The chief types of machinery, the imports of which increased during the year, were cotton and jute mill machinery, electrical machinery, paper mill machinery, sugar machinery, tea machinery, and refrigerating machinery; on the other hand mining machinery, oil-crushing and refining machinery, metal-working machinery, and rice and flour mill machinery were subject to decreases. The most valuable item included in the machinery group was, as usual, textile machinery, whose total value rose during the year from Rs. 3,09 lakhs to Rs. 3,65 lakhs. This represented an increase of Rs. 56 lakhs or 18 per cent, to which cotton machinery contributed Rs. 19 lakhs and jute machinery Rs. 36 lakhs. Recent developments in connection with the electrification of railways and industry were responsible for the increased imports of electrical machinery, which were valued at Rs. 2,37 lakhs, as compared with Rs. 2,00 lakhs in 1927-28. The imports of paper mill machinery rose from Rs. 9 lakhs to Rs. 35 lakhs, as a result partly of the establishment of a new paper mill in the Punjab and partly of extensions in the existing mills in Bengal, and there were increases of 11·9 and 4 lakhs respectively in the value of imported refrigerating, sugar, and tea machinery. Of the decreases, the most striking were those in the values of mining, and oil-crushing and refining machinery, which amounted to 71 and 31 lakhs respectively. The decline in metal working

machinery was to the extent of 8 lakhs, and in rice and flour mill machinery Rs. 2 lakhs. The three most important countries trading with India in machinery and millwork were the United Kingdom, the United States, and Germany. In 1927-28 their respective percentage shares in the trade were 78·5, 10·1, and 6·7, and during the year under review they were, 76·5, 11·3, and 6·4; but although machinery and millwork as a whole holds third place in the list of imports, its value amounts to no more than 7·25 per cent. of the total.

Sugar again took fourth place among India's imports, and conditions in the sugar trade as a whole remained very much the same as they were in the preceding year. World consumption again failed to overtake the increased production, and consequently prices were low. The estimated sugar production of the world during the year was 27,280,000 tons,—an increase of 1,961,000 tons over the figure for 1927-28. Java, as usual, supplied the largest proportion of the sugar imported into India, and her 1928-29 crop was estimated to amount to 2,939,000 tons as compared with 2,360,000 tons in 1927-28. At the beginning of the year stocks of sugar were low both in Calcutta and Bombay, and the demand was brisk; but later, purchases tended to be postponed until the last moment, owing to the fact that dealers suspected the amount of the new Java crop to have been under-estimated and that consequently prices would not be maintained,—which ultimately proved to be the case. Imports of sugar of all sorts, excluding molasses, increased from 725,800 tons valued at Rs. 14,50 lakhs in 1927-28 to 868,800 tons valued at Rs. 15,86 lakhs in 1928-29, the increase being almost entirely due to heavy shipments from Java, which amounted to 850,800 tons, as against 692,200 tons in the previous year. The United Kingdom sent 4,800 tons, Ceylon 4,000 tons, and China, including Hongkong, 2,100 tons. Supplies from the United States practically ceased. A curious feature of the imports during recent years has been the rapid decline in the quantity of beet sugar despatched to India, which amounted to 176,000 tons in 1926-27, 18,000 tons in 1927-28, and 8,400 tons in 1928-29. Imports from Russia have stopped and 3,400 out of the 8,400 tons received during the year under review came from the United Kingdom, whose shipments during the previous year were negligible.

Fifth in the list of imports comes mineral oils. During the year there was again over-production of crude oil in the United States

and, as a result, prices of the refined products continued to be low, although they were prevented from falling heavily by the remarkable growth in the demand. A definite move was moreover made by the big international oil combines towards co-ordinating their marketing arrangements. The Burmah Oil Company acquired an interest in the Shell Transport and Trading Company, which made it possible for an agreement to be effected between the Anglo-Persian Oil Company and the Asiatic Company of the Royal Dutch Shell group for the pooling of their distributing organizations in the East; and the leading United States oil producers formed an oil export company, with a view to effecting greater economy in the foreign trade by eliminating unnecessary duplication in marketing. These co-operative arrangements should enable the combines to effect economies by drawing on supplies from the nearest sources of production. The total imports of all kinds of mineral oils into India rose by 4 per cent. in quantity from 232 million gallons in 1927-28 to 242 million gallons in 1928-29, and by 2 per cent. in value from Rs. 10,44 lakhs to Rs. 10,70 lakhs; of the total imports in 1928-29, kerosene oil and fuel oils represented 43 per cent, and lubricating oils 11 per cent. The imports of kerosene oil during the previous year were stimulated by the price-cutting war which broke out between the Royal Dutch Shell group and the Standard Oil group, and amounted to 94 million gallons which was much above the figure for any year except 1919-20. But the 1928-29 imports exceeded even this record figure and totalled 105 million gallons, and the value rose from Rs. 5,39 lakhs to Rs. 5,76 lakhs. Coastwise imports from Burma to India proper amounted to 93·5 million gallons as compared with 120 million gallons in the preceding year. Of the foreign supplies the United States of America, which had hitherto been the chief source, reduced her contribution from 47 million gallons to 14 million gallons, mainly owing to the increased proportion of Russian oil imported into India by the Standard Oil Company. These imports from Russia, including Georgia, which were *nil* in 1926-27, rose to 19½ million gallons in 1927-28 and to 43 million gallons in 1928-29. Imports from Persia also advanced from 9 million gallons to 32 million gallons. Borneo and Sumatra together supplied 13 million gallons,—almost the same as in the preceding year; while consignments from the Straits Settlements, which are also of Dutch East Indies origin, fell from 4 million gallons to about 1 million gallons. Imports of fuel oils in 1928-29

totalled 104 million gallons, compared with the record figure of 107 million gallons in 1927-28, the decline being mainly due to the lower consumption in Bombay cotton mills as a result of the strike. The value of fuel oils imported dropped from Rs. 2,33 lakhs in 1927-28 to Rs. 2,06 lakhs in 1928-29. Imports were, as usual, mostly from Persia, which supplied 82 million gallons or 79 per cent. of the total quantity imported, as compared with 86 million gallons or 81 per cent. in the preceding year. Direct shipments from Borneo were almost on the level of the preceding year and amounted to over 15 million gallons, while consignments from the Straits Settlements rose from 3 million gallons to 7 million gallons. Imports of foreign motor spirit increased in quantity from 138,000 gallons to 168,000 gallons, but fell in value from Rs. 2 lakhs to Rs. 1½ lakhs. The coastwise imports of petrol and other motor spirit from Burma into India proper amounted to 45 million gallons as compared with 39 million gallons in 1927-28 and 29 million gallons in 1926-27.

Motor vehicles remained sixth in the list of imports, in spite of a remarkable expansion in the number of cars and vans received during the year, which surpassed all previous records. The reduction in the initial cost of cars, as a result of the lowering of import duty from March, 1927, the competition among rival motor car interests to push their sales in India, and the lower prices of petrol, tyres, tubes and other accessories were chiefly responsible for the increase in the demand. The number of cars imported in 1928-29 was 19,567 valued at Rs. 4,21 lakhs,—an increase of 30 per cent. in quantity and of 19 per cent. in value as compared with 1927-28, when the imports nearly equalled in number the previous record of 1920-21 and totalled 15,122 valued at Rs. 3,54 lakhs. While the number of British cars imported is slowly increasing, the progressiveness of the American industry in developing its products and its sales organization has assured it a very large business in India. Over 74 per cent. of the cars imported came from the United States and Canada and 19 per cent. from the United Kingdom, as compared with 62 and 24 per cent. respectively in the preceding year. The average declared value of cars imported from the United States of America remained fairly steady at Rs. 2,200 since 1926-27, while that of the Canadian and the British cars dropped from Rs. 1,858 and Rs. 2,848 in 1927-28 to Rs. 1,643 and Rs. 2,676 respectively in 1928-29. Cars imported from the United States numbered 7,943 with a total value of Rs. 1,81 lakhs as compared with 6,031 with

a total value of Rs. 1,34¼ lakhs in 1927-28. Canada regained much of the ground lost in 1927-28, owing to the temporary suspension of the manufacture of Ford cars, and sent 6,56[illegible] cars valued at Rs. 1,08 lakhs as compared with 3,400 cars valued at Rs. 63 lakhs in the preceding year and 4,476 cars valued at Rs. 70 lakhs in 1926-27. Imports from the United Kingdom increased from 3,600 to 3,645, but, owing to her concentration on the production of low-priced cars for the export market, the value decreased from Rs. 1,02½ lakhs to Rs. 97½ lakhs. Imports from other countries, notably France and Italy, decreased. Hitherto, the largest number of cars has been received in Bengal, but the establishment of an assembling plant by General Motors, Ltd., in Bombay, caused a change. Of the total number of cars imported during the year, 6,705 cars (34 per cent.) were received in Bombay, 5,577 (29 per cent.) in Bengal, 3,399 (17 per cent.) in Madras, 2,178 (11 per cent.) in Sind and 1,708 (9 per cent.) in Burma. During the year the imports of motor cycles declined from 2,146 valued at Rs. 12 lakhs to 1,802 valued at Rs. 10 lakhs. The United Kingdom supplied 1,611 or 89 per cent. of the total as compared with 1,964 or 91 per cent. in the preceding year. Imports from the United States of America numbered only 55 as against 67 in 1927-28 and 75 in 1926-27, while those from France and Germany showed small increases from 40 and 14 in 1927-28 to 62 and 15 respectively. On the other hand the imports of motor omnibuses, vans and lorries expanded remarkably and reached a total of 12,790 valued at Rs. 2,16½ lakhs as compared with 8,682 valued at Rs. 1,49½ lakhs in 1927-28. The bulk of the imports came, as usual, from Canada and the United States, these two countries together having supplied 95 per cent. of the trade as compared with 92 per cent. in 1927-28. Imports from Canada rose from 4,268 to 6,373 in number and from Rs. 55 lakhs to Rs. 81 lakhs in value. The supplies from the United States of America also increased from 3,699 valued at Rs. 67 lakhs to 5,809 valued at Rs. 1,10 lakhs. British manufacturers, notwithstanding a substantial reduction in prices, had very little share in the increase in the sales of heavy motor vehicles in India; the number imported from the United Kingdom slightly rose from 447 to 473, but the value dropped from Rs. 22¾ lakhs to Rs. 20½ lakhs. The average declared value of chassis imported from the United Kingdom was as high as Rs. 4,083 as compared with Rs. 1,887 for the American and Rs. 1,262 for the Canadian makes. The corresponding figures for

the preceding year were Rs. 3,694 for the British, Rs. 1,733 for the American, and Rs. 1,272 for the Canadian chassis. The total number of all classes of motor vehicles registered in the different provinces of British India up to the end of March, 1929 was 172,680, which is of course small; but the outlook for the motor vehicle trade in India is encouraging, particularly for the manufacturers of lighter models. Lack of adequate roads has hitherto been the principal reason for the backwardness of motor transport, but the policy of road development which has been briefly described in Chapter V should stimulate the trade. It is moreover worth while remarking that the increased imports of motor vehicles is necessarily stimulating the trade in rubber manufacture, the imports of which increased remarkably during the period dealt with in our previous Report, and which showed a further slight increase during 1928-29 namely from Rs. 2,71 lakhs to Rs. 2,86 lakhs.

There have been few developments worthy of mention in connection with the other, less valuable, groups of imports during the year. Readers will recollect that in our last Report we devoted considerable space to an examination of the remarkable growth which had recently taken place in the imports of artificial silk. But during 1928-29 the process was arrested and a slight decline occurred, the value of the imports falling from Rs. 1,49 lakhs to Rs. 1,35 lakhs. The quantity imported however rose from 7·5 to 7·7 million lbs. The share of the United Kingdom fell from 2·3 million lbs., valued at Rs. 46,8 lakhs, to 1·7 million lbs. valued at Rs. 30,5 lakhs, while imports from Italy went up from 3·4 million lbs. to 3·6 million lbs., although their value declined from Rs. 66 lakhs to Rs. 61 lakhs. Of the other Continental countries, Germany, the Netherlands and Switzerland increased their imports, whilst those of France declined. The only other remarkable feature of the year's imports was the extraordinary rise in the value of the grains, pulses and flours received, which rose from the 22nd place on the list to the 7th. This was almost entirely due to the increased imports of wheat which were called for as a result of the drought in the chief wheat-growing districts in India. The imports of the year amounted to 562,000 tons, whereas in the previous year they were only 69,000 tons.

We may now turn to a detailed consideration of India's exports during the year 1928-29. Jute and its manufactures again took first place on the list. The total outturn however showed a slight



decline, having amounted to 10 million bales, as compared with 10·2 million bales in 1927-28 and 12·1 million bales in 1926-27. The decline was mostly due to the weather, which was unfavourable to the crop, and also doubtless in some degree to the "short crop" propaganda started by the Indian National Congress early in 1928. It is of course difficult to estimate the effect of this propaganda on cultivation, but judging from the figures of acreage, it does not appear to have been substantial. The shortage caused the price of raw jute to be generally higher throughout the year than it was in 1927-28. During April, owing to the heavy stocks held from the previous year's crop, prices did not rise appreciably. But early in May the upward trend began, and reached the peak in July when the price had risen to Rs. 79 per bale of the old crop and Rs. 84 per bale of the new crop. By September the new crop began to come into the market and the situation was considerably eased. The final forecast issued in that month indicated an outturn of 9,916,000 bales, but the trade had been expecting even a lower outturn than this and the result was an immediate lowering of prices, which at one time touched Rs. 62-8. The end of November however saw prices round about Rs. 68 to Rs. 69 per bale, and throughout the remaining period, with the exception of a slight set-back during December and January, prices were generally on the increase and on the 26th of February the rate was Rs. 74 per bale. The demand for jute and jute manufactures showed an increase during the year, and as supplies of raw jute were not as plentiful as in 1927-28, the industry had a prosperous year. The mills continued to work 54 hours a week, but it was agreed that from July, 1929, the working hours should be extended to 60 a week. The number of looms at work in Bengal on the 1st of January 1929, was 50,041. The total weight of raw and manufactured jute exported during the year amounted to 1,809,000 tons, or 32,000 tons more than in the preceding year, while the total value increased from Rs. 84,23 lakhs to Rs. 89,25 lakhs. Raw jute accounted for 36 per cent. of this value and jute manufactures for 64 per cent. The quantity of raw jute exported was about 1 per cent. higher than in the preceding year and 17 per cent. higher than in 1913-14. The exports of gunny bags increased in number from 463 millions to 498 millions and of gunny cloth from 1,553 million yards to 1,568 million yards. Of 5,028,000 bales of raw jute exported during the year, Germany took 1,457,000 bales valued at Rs. 8,96 lakhs as against 1,399,000 bales

valued at Rs. 8,54 lakhs in the preceding year. On the other hand, exports to the United Kingdom decreased from 1,244,000 bales valued at Rs. 7,68 lakhs in 1928-29, to 1,130,000 bales valued at Rs. 7,57 lakhs in 1928-29. As regards other countries, none of which took as much as 1,000,000 bales, the purchases of France, the United States and Belgium increased, whilst those of Spain, Brasil and the Netherlands declined, and those of Egypt and Japan remained about the same as in the previous year. The total export of gunny bags increased in number from 463 millions to 498 millions, and in value from Rs. 23¼ crores to Rs. 25 crores. Australia, as usual, remained the best market for gunny bags and took 91 millions as against 76½ millions in the preceding year. The United Kingdom took 44½ millions as against 46 millions in the preceding year. The takings of Cuba, Java, Chile, Peru, South Africa, Egypt, Indo-China and Hawaii increased, whilst those of the United States, the Straits Settlements, Siam and Japan declined, and those of China remained the same. As regards gunny cloth the year's exports also increased, being 1,568 million yards valued at Rs. 19½ crores as compared with 1,553 million yards valued at Rs. 18½ crores in 1927-28. The United States remained much the largest purchaser and absorbed 1,022 million yards, which was practically the same quantity as in the previous year. The only other large purchaser was the Argentine, which took 340 million yards as compared with 331 million yards.

Cotton and cotton manufactures again took the second place among India's exports. The cotton crop of the season 1928-29 was estimated at 5,811,000 bales of 400 lbs. each, as compared with 5,963,000 bales in the preceding year. Up to January, 1929, it was expected that the crop would be a large one, but the cold weather in January and February caused a great deal of damage, especially in Gujerat, and the outturn suffered considerably. The American crop of 1928 was larger than that of 1927, although it was not as abundant as the crops of 1925 and 1926; its yield in 1928 was estimated at 14,478,000 bales of 500 lbs. each (equivalent to 18,097,000 bales of 400 lbs. each) as compared with 12,955,000 bales of 500 lbs. each for 1927. The outturn of Egyptian cotton also was better, being 1,943,000 bales of 400 lbs. each as compared with 1,507,000 bales in 1927-28. Generally speaking Indian cotton prices moved, as usual, in sympathy with American prices throughout the year. In the first half of 1928 two factors gave a bullish tendency

to the market for American cotton and kept prices on the increase, one being the unfavourable reports from America about the weather and about the prevalence of boll weevil, and the other, the publication of the half-yearly statistics of the International Federation of Cotton spinners, which raised expectations that the world's requirements for the twelve months would not be smaller than in 1926-27 when the consumption was of record dimensions. These two factors dominated the situation in the early part of 1928. From 9·79*d*. per lb. on the 3rd February the price rose gradually until it reached 12·53*d*. per lb. in July. From that month, however, prices began to decline and by the 15th September reached 9·72*d*. per lb. The main cause of the decline was the publication of the acreage figures and the consumption returns, the former being larger and the latter smaller than had been anticipated. From October until the end of February prices fluctuated between 10*d*. and 11*d*. per lb. Favourable reports on the world consumption of American cotton caused prices to rise to 11·14*d*. per lb. by the middle of March, but afterwards there was a slight decline and on the 28th March, 1929, the price was only 10·96*d*. per lb. The two most important indigenous factors affecting the course of prices of Indian cotton were the comparatively large crop of the 1927-28 season and the long-drawn-out mill strike which broke out in April 1928, and lasted till October. As the supply was ample and the consumption reduced owing to the strike, stocks in Bombay were heavy almost throughout the whole year. The level of Indian prices was consequently below parity as compared with American prices for a great portion of the year, with the result that exports of raw cotton were greatly encouraged and showed a substantial increase as compared with the two preceding years, since they amounted to 3,712,000 bales as against 2,686,000 in 1927-28 and 3,188,000 in 1926-27. Both Japan and China increased their takings, Japan's share going up from 1,235,000 to 1,610,000 bales and China's from 112,000 to 403,000. The participation of European countries in the purchases of Indian cotton also showed considerable increases. The combined takings of Italy, Belgium, Germany, and the United Kingdom amounted to 1,296,000 bales as compared with 977,000 bales in 1927-28, and increased purchases were also made by France, Spain, the Netherlands and the United States.

Owing to the strike in the Bombay mills from April to October 1928 and the communal riots in February, the condition of the

Indian cotton manufacturing industry was far from normal, and it is not possible to draw a correct picture of the situation from the statistics of the year. The production of yarn in mills in India declined to 648 million lbs. as compared with 809 million lbs. in 1927-28 and 807 million lbs. in 1926-27. Exports of yarn however declined by only about ⅓ million lbs. and amounted to 24⅓ million lbs.; the value moreover increased from Rs. 1,88 lakhs in 1927-28 to Rs. 1,96 lakhs in 1928-29. As in the preceding year, the exports to China were comparatively small, though they rose by a million lbs. The exports to other countries more or less maintained their position and the decline on the exports of 1926-27 was due entirely to the loss of the Chinese market. The production of piecegoods in Indian mills in 1928-29 declined by 20 per cent. as compared with the preceding year. The proportion of the exports of piecegoods to the total production was 8 per cent. in 1928-29 as compared with 7 per cent. in 1927-28 and 8·7 per cent. in 1926-27; but the actual quantity exported, as compared with that in the preceding year, declined from 169 million yards valued at Rs. 6,19 lakhs in 1927-28 to 149 million yards valued at Rs. 5,37 lakhs in 1928-29. As in the previous year, the largest single customer for Indian piecegoods was Persia which took 23·8 million yards in 1928-29. The Persian trade has however been consistently declining during the last few years as a result of severe competition from European countries which serve Persia from the North and West. India exported 28 million yards to Persia in 1927-28 and 38 million yards in 1926-27; thus there has been a decline of nearly 14 million yards in two years. For similar reasons exports to Iraq have been declining; in the year under review they amounted to only 18·7 million yards as compared with 24 million yards in 1927-28 and 38 million yards in 1926-27, a decline of nearly 19½ million yards in the two years. Declines have also to be noted in the exports to the Straits Settlements, Ceylon, Egypt, Kenya Colony, and Portugese East Africa. On the other hand, exports to Tanganyika Territory, Siam and Arabia showed slight increases.

Since the issue of our last Report an officer has been appointed to examine the possibility of substituting a system of specific duties for the existing system of '*ad valorem*' assessment of cotton piecegoods, and simultaneously to ascertain and report what changes have taken place, since the Tariff Board reported, in the volume of

imports, the classes of goods imported, and the extent and severity of external competition with the products of Indian mills.

Exports of foodgrains and flour, which take third place on the list, and which increased in the previous year, suffered a serious set-back owing to the depressed conditions of the rice trade and the short wheat crop of 1927-28. The total quantity exported amounted to 2,300,000 tons as against 2,784,000 tons in the preceding year, and the value decreased from Rs. 42,9 crores to Rs. 33,7 crores. Shipments of rice declined from 2,187,000 to 1,817,000 tons, and of wheat from 300,000 to 115,000 tons. The decline in the exports of rice, wheat and wheat flour amounted to 561,000 tons. On the other hand, exports of grains, pulse and flour (other than rice, wheat and wheat flour) increased from 237,000 to 314,000 tons, and the net decline in the total exports consequently amounted to 484,000 tons. Rice accounted for 79 per cent. of the total quantity of foodgrains and flour exported,—as in the preceding year. Wheat and wheat flour accounted for 7 per cent. as against 13 per cent., barley for 6 per cent. as against 2·6 per cent., and pulses again for 5 per cent. The production of cleaned rice in 1928-29 was 3·9 million tons more than in 1927-28, but exports of rice and paddy together declined by 370,000 tons as compared with 1927-28. Of the important rice-growing Provinces, Burma alone possesses a large exportable surplus. Her total exports in 1928-29 were 1,538,000 tons as compared with 1,889,000 tons in the preceding year, and amounted to 85 per cent. of the total exports of rice from India. Prices during 1928-29 were much lower than in 1927-28, owing to the fact that both Indo-China and Siam, the other two important exporting countries, had bumper crops in 1927-28, and India's rice export trade was consequently in an unhealthy state throughout the year. A contributory cause of depression has been the fact that the United States, Spain and Italy have taken to the production of rice in fairly large quantities since the end of the war, and their combined production was estimated by the trade to have increased three-fold from about 600,000 tons before the war to about 1,800,000 tons in recent times. There were substantial decreases in the quantities of rice taken by all the more important purchasing countries during the year: Ceylon's share fell from 461,000 to 417,000 tons, Germany's from 346,000 to 208,000, that of the Straits Settlements and Sumatra from 313,000 to 288,000 and that of Japan from 150,000 to 8,000. A few smaller purchasers on the other hand increased their demands, the most important being

Java and Malaya, which between them took 91,000 tons as compared with 51,000 in the previous year. It appears on the whole that India has lost considerable ground in the European markets owing to the competition of better graded and better marketed rice supplied from America, Spain and Italy, and that if this ground is to be made up, the methods followed by these rice-producing countries may have to be resorted to. But in considering the rice export trade of Burma, which accounts for nearly 85 per cent. of India's rice exports, two factors must be taken into consideration. The first is the dependence of the exports upon the surplus available, which in turn largely depends on the surplus of the preceding year's crop. Thus in comparing the exports of the years 1927-28 the surpluses of the crops for 1926-27 and 1927-28 have to be borne in mind. The surplus available for export from the crop of 1926-27 which determined the exports of 1927-28 was 2,913,000 tons; whereas the surplus available from the 1927-28 crop which determined the exports of the year 1928-29 was 2,717,000 tons, a decline of 196,000 tons. This to a great extent explains why exports from Burma declined in the year 1928-29. The other factor to be considered is that from this surplus available for export from Burma, India proper took in the year under review 1,060,000 tons as compared with 904,000 tons in 1927-28, an increase of 156,000 tons. Thus the decline in the exportable surplus in Burma, coupled with the increased takings of India proper, accounted largely for the decline in the total exports of Burma to foreign countries; and on the whole the position of the Burma rice export trade was not actually as serious as it appears. But it must be borne in mind that some of the competing countries have gained a large part of their advantage by the use of scientifically selected varieties of the crop, and that India is tending to lag behind in this respect.

Wheat, which is the other important crop in this group, gave very unsatisfactory results during 1928. Despite an increase of 3 per cent. in the acreage, the total outturn amounted to only 7·79 million tons as compared with 8·97 million tons in the preceding year. The harvest of 1929 amounted to 8·5 million tons. At the beginning of the financial year 1928-29 there was no indication that the crop would turn out to be short and a considerable amount of export took place. Of the 115,000 tons exported as much as 79,000 were sent out within the first quarter of the year. The peak of the movement was reached towards the end of May, instead of in the

second half of June or the beginning of July as is usual; but the activity in the export market came to a sudden stop as soon as the short condition of the Indian crop was realized, and the good American crop came into the world's markets. The total exports for the year therefore amounted to no more than 115,000 tons, as compared with 300,000 tons in 1927-28 and 1,112,000 tons in 1924-25, and their value declined from Rs. 4,41 lakhs in 1927-28 to Rs. 1,69 lakhs in the year under review. As usual, the greater portion of the exports, amounting to 76,000 tons valued at Rs. 1,11 lakhs, was taken up by the United Kingdom. Ninety-five per cent. of the exports passed through Karachi. The quantity of foodgrains other than rice and wheat which were exported increased from 237,000 tons valued at Rs. 3,21 lakhs in 1927-28 to 314,000 tons valued at Rs. 4,37 lakhs in 1928-29, and included barley, *jowar* and *bajra*, beans and gram.

Oilseeds ranked fourth in importance in India's export trade during 1928-29, having dislodged tea from the place it held in the previous year. The total exports of oilseeds showed an increase of 10 per cent. in quantity and 11 per cent. in value from 1,210,000 tons valued at Rs. 26,69 lakhs in 1927-28 to 1,328,000 tons valued at Rs. 29,63 lakhs in 1928-29. Compared with the pre-war average, there was a decrease of 9 per cent. in quantity but an increase of 22 per cent. in value. Mention was made in last year's Report of the change which has occurred during the last 15 years in India's trade in oilseeds, owing to the increase in local consumption, which has been able to outbid a weak foreign demand. In copra, for example, India's exports averaged 31,000 tons annually during the pre-war period. In 1926-27 exports dwindled down to only 2,000 tons and practically disappeared in the following two years. In linseed, cotton seed, rape seed and sesamum there has also been a substantial reduction in India's exportable surplus compared with the pre-war figures. But in the case of groundnuts internal consumption has not yet overtaken the advance in production which has resulted from increased cultivation, and consequently much larger quantities are available for export. The estimated outturn of groundnuts in 1927-28 was 2,718,000 tons, which was 33 per cent. higher than the previous season's crop. The outturn of the 1928-29 crop was put at 3·2 million tons, a record figure. The total quantity of groundnuts shipped from British India during 1928-29 was again a record, being 788,000 tons compared with 613,000 tons in 1927-28 and 212,000

tons in the pre-war period. The large increase in the exports of groundnuts may be attributed to their growing use as a raw material for the manufacture of margarine and edible oils in preference to other competitive commodities. As in the preceding year, Germany was the largest purchaser and took 214,000 tons followed by France with 216,000 tons, their respective takings in 1927-28 being 218,000 and 151,000 tons. Exports to the Netherlands and Italy also increased to 132,000 and 121,000 tons from 112,000 and 80,000 tons respectively in the preceding year. As regards the other oilseeds, the exports of linseed declined from 222,500 to 157,000 tons, of cotton seed from 153,000 to 131,000 tons, and of castor seed from 122,000 to 121,000 tons; exports of rape seed and sesamum on the other hand rose slightly, the former from 66,000 to 77,000 tons and the latter from 11,000 to 30,000 tons.

The tea industry had a very bad season in 1928-29. Heavy stocks at the beginning of the year and a general increase in out-turn from all producing countries made for low prices. Production in India during 1928 amounted to 404 million lbs. and thus exceeded that of 1927 by 13 million lbs.; but exports declined from 362 million lbs. to 360 million lbs., and the general standard of quality of the year's tea was below the average. Of the total production, Assam, as usual, contributed the largest share, which amounted to 246 million lbs. or 61 per cent. of the total output, while Northern India exclusive of Assam, contributed 101 million lbs. or 25 per cent., and Southern India 57 million lbs. or 14 per cent. Production in Assam increased by 10 million lbs. whereas production in the rest of Northern India fell off by about 2 million lbs. The total area under tea in 1928 was 773,000 acres as against 756,000 acres in 1927. 89 per cent. of the total production was exported overseas. The total shipments showed a decrease of about 1 per cent. in quantity and 18 per cent. in value. Only 439,000 lbs. of green tea were exported during the year, the balance of 359 million lbs. consisting of black tea. Exports to the United Kingdom totalled 299 million lbs. valued at Rs. 22¼ crores as compared with 307 million lbs. valued at Rs. 28¼ crores in 1927-28, and amounted to 83 per cent. of India's exports as compared with 85 per cent. in the preceding year. Re-exports of Indian tea from the United Kingdom were 52 million lbs. in 1928-29 as compared with 45 million lbs. in 1927-28. The Irish Free State took 18·4 million lbs., as compared with 17 million lbs. in 1927-28, but Russia took 5·3 million lbs. as against

6·2 million lbs. in the preceding year. From the London market other European countries together took Indian tea to the extent of 11·9 million lbs. as compared with 10·3 million lbs. in 1927-28; and the purchases of the United States from London increased from 4·6 million lbs. to 7·5 million lbs., and of Canada, including Newfoundland, from 4 million lbs. to 5·3 million lbs. Direct shipments from India to the United States, however, decreased from 8·8 million lbs. to 7·8 million lbs., but those to Canada increased from 9·3 million lbs. to 11·2 million lbs.

No noteworthy change occurred in connection with the export of hides and skins, which comes next on the list. The total trade was slightly larger than in 1927-28, although the demand both from the United Kingdom and from Germany decreased. The total exports of raw hides and skins during the year amounted to 66,100 tons valued at Rs. 9,56 lakhs, as compared with 64,400 tons valued at Rs. 8,81 lakhs in 1927-28; and the exports of tanned or dressed hides and skins increased from 23,300 tons valued at Rs. 9,07 lakhs to 23,500 tons valued at Rs. 9,31 lakhs. As regards metals and ores, the total exports during the year were valued at Rs. 8,91 lakhs, and amounted to 739,000 tons as compared with 760,000 tons in the preceding year, manganese ore representing about 92 per cent. of the total, although its value was only Rs. 1,97 lakhs. Other important items in this group were pig-lead, pig-iron, chromite, wolfram ore, and ferro-manganese. The export trade in lac, which comes next in value to that in metals and ores, made substantial advances during the year, the quantity shipped having increased from 544,000 cwts. to 743,000 cwts. and the value rising from Rs. 6,99 lakhs to Rs. 8,64 lakhs. There was also an improvement in the exports in raw wool, which rose in quantity from 50 to 56 million lbs. and in value from Rs. 4,36 lakhs to Rs. 4,89 lakhs. Of the other, less important exports, the only movements worthy of note were decreases in the value of the trade in raw rubber, coffee, spices, and opium, and increases in the shipments of oilcakes and tobacco.

Hitherto we have been describing India's overseas trade only, and have made no reference to the trade across her land frontiers, which despite the extreme geographical difficulty of a large proportion of them is at least sufficient in value and importance to deserve mention. The North-Western and the North-Eastern borders are of course the most practicable for overland trade. The revised system of registration for the land frontier trade was described in our Report

last year, and no changes have since taken place. Foodgrains form the largest item of this trade, and during the year under review the majority of the overland exports and imports showed satisfactory increases.

Having now discussed the chief features of India's overseas trade during the year 1928-29, and mentioned the commerce across her land frontiers and around her coasts, we will conclude this Chapter by briefly describing some of the more important topical questions connected with trade which have recently been dealt with by the Government. These of course fall within the year 1929-30, since in their case there is no such difficulty as in that of the detailed trade figures in obtaining up-to-date information. Most of the points we shall mention have arisen out of the change in India's fiscal policy which was effected after the Reforms of 1920; for the Fiscal Commission, which was appointed in 1921, recommended that, subject to enquiry by a Tariff Board, industries in this country should be enabled to secure protection against external competition,—and although when the Tariff Board came into existence in 1923 it was a purely experimental body created for one year only, the applications for protection from various industries have been sufficiently numerous to necessitate its life being prolonged up to the present moment.

During the year under review the Board concluded an investigation into the question of tariff equality in the manufacture of manila rope, which had been initiated in March, 1925. The Board had been asked to examine the position of those industries whose development was hampered by the fact that the duty on the finished articles was lower than that on the materials which are imported for their manufacture; and in January 1929 it recommended that the import duty of 15 per cent. on manila hemp should be removed. The Government accepted the principle of this recommendation and announced in a Resolution issued on the 8th of June that it proposed to give effect to it as soon as financial considerations permitted.

An important question which the Tariff Board has had under consideration is that of salt. It has often been urged that in view of her own potential resources India ought to become entirely self-supporting in the matter of her salt supplies, and in 1926 the Taxation Enquiry Committee recommended that the whole question should be referred to the Tariff Board. The Central Board of Revenue accordingly inquired into this recommendation, but after

investigation reported that there was no *primâ facie* case for reference to the Tariff Board, for two reasons:—firstly, because in their view it was neither necessary nor desirable on general economic grounds, or from the point of view of insuring the country against shortage in time of war, to aim at dispensing with sea-borne salt altogether; and secondly, because there was in any case insufficient evidence to show that enough fine white crushed salt could be produced in India to supply the needs of Bengal, where most of the imported salt is consumed. A debate in the Legislative Assembly in March 1929, however, revealed the fact that many members were dissatisfied with these conclusions, and in view of the progress which had meanwhile been made in manufacturing the finer grades of salt at Karachi, the Government was led to reconsider the position. As a result, the question was submitted to the Tariff Board for enquiry after all.

A fiscal measure of great importance, whose somewhat dramatic political repercussions we discussed in Chapters I and III, was the Cotton Textile Industry (Protection) Act which was passed by the Legislative Assembly and the Council of State during March and April 1930. The Act imposes protective duties on all classes of imported cotton piecegoods to the extent of 15 or 20 per cent. *ad valorem* according as they are of British or non-British manufacture, subject to a minimum specific duty of 3½ annas per lb. on plain gray goods of whatever origin; and extends for a further three years the minimum specific duty of 1½ annas per lb. on cotton twist and yarn and cotton sewing and darning thread levied under the Indian Tariff (Cotton Yarn Amendment) Act, 1927. The new duties on piecegoods are to be in force until the 31st of March 1933.

The Indian Finance Bill of 1927 provided for the removal of the export duty of 5 per cent. *ad valorem* on raw hides, but when the proposal was put to the vote in the Assembly, the division was equal and the President gave his casting vote in favour of the *status quo*. It then appeared to the Government that an acceptable solution of the difficulty might be found in the replacement of the export duty by an export cess, which would be administered by a committee on the lines of the Indian Central Cotton Committee, and would be expended for the benefit of the industry as a whole. But it was felt that this committee should not be set up without some preliminary investigation, and it was accordingly decided after consultation with provincial Governments, to appoint an *ad hoc*

committee, including representatives of the rawstock export trade and of the tanning industry, to enquire and report on the articles on which a cess might suitably be imposed and the rate of cess on each article, on the constitution and personnel of the committee which would administer such a cess, and on the functions of the committee and the objects on which the cess might be expended. At the end of the year under review the committee had concluded its enquiry, but its report was still awaited.

A Bill to replace the Indian Lac Cess Act of 1921 was introduced into the Assembly during the Spring Session of 1930. The defect of the existing Act is that the control of the proceeds of the cess is vested in a Committee of the Lac Association, which is not a statutory body, and which in its own opinion has neither the knowledge nor experience to control the conduct of research in the lac industry to the best advantage. The Bill is accordingly designed to establish a Statutory Committee on the lines of the Central Cotton Committee, which shall receive and expend the proceeds of a cess levied at the same ratio as the existing cess, and thus amounting to not more than 4 annas per maund for all lac and 2 annas per maund for all refuse lac exported from British India. The Bill has been referred to a Select Committee of the Assembly but has not yet been passed.

The Indian Soft Coke Cess Act, 1929, providing for the levy of a cess of 2 annas per ton on all soft coke despatched by rail from collieries in Bengal, and Bihar and Orissa, was passed by the Legislatures during the year under review. The cess will be administered by a committee which was established in December, 1929, consisting of members representing the two provincial Governments concerned, the Indian Mining Federation, and the Indian Mining Association, under the Chairmanship of the Chief Mining Engineer to the Railway Board. The object of the cess is the establishment of a fund out of which improvements in the methods of manufacturing and marketing soft coke may be financed.

In our Report for the year 1927-28, mention was made of the International Convention for the Abolition of Import and Export Prohibitions and Restrictions which had been drawn up at Geneva in the autumn of 1927, and signed by representatives of various countries, including those of India. Since that date, however, the Government of India has decided not to ratify the Convention, since the Japanese Government, when ratifying it, made a reservation

enabling them to impose a prohibition on the imports of rice, which they have enforced. This prohibition not only seriously restricts the market for Indian rice,—as we have already seen,—but also penalises the Indian rice trade as compared with that of Siam, to which the prohibition cannot be applied owing to a special provision embodied in the Japanese-Siamese Treaty of 1924.

Reference was made in last year's Report to the International Conference on Economic Statistics which was held at Geneva in December 1928, and at which India was represented by Dr. D. B. Meek, Director General of Commercial Intelligence and Statistics. The Government has examined the Convention drawn up by the Conference in the light of the report submitted by Dr. Meek and has decided to accede to it, subject to certain reservations.

During the year under review the Government had under consideration a scheme for appointing Indian Trade Commissioners in Europe, America, Africa, and Western Asia, and for the opening of a Commercial Intelligence Office at Bombay. The principal object of the scheme is to meet the increasing competition which the Indian export trade has to face in Western markets, and to develop new markets, nearer home, by appointing Trade Commissioners at Hamburg, Milan, New York, Alexandria, Durban and Mombasa; and it is intended to establish at least two of these posts in each of the next three years. Some further expansion of the trade intelligence organization in India will also be necessary, and it is anticipated that a Deputy Director of Commercial Intelligence will be appointed in Bombay.

During the year under review India was represented at a number of Fairs and Exhibitions in the United Kingdom and on the Continent of Europe. The more important were the annual British Industries Fair, the Leipzig International Industries Spring Fair,—in which India has now participated on three successive occasions,—the North-East Coast Exhibition at Newcastle, the International Grocer's Exhibition at Islington, and the Empire Exhibition at Plymouth. India maintained two stalls at the British Industries Fair, one forming a part of the Empire Marketing Board stand where Indian foodstuffs and provisions were exhibited, and the other a separate stand organized by the High Commissioner for the display of Indian raw products and manufactured goods.

Section 144 of the Indian Companies Act, 1913, deals with the appointment and qualifications of auditors of public companies in

British India. During the Session of the Legislature in the spring of 1930 an Act was passed amending this section in such a way as to enable a new scheme which had been prepared by the Government of India, in consultation with provincial Governments and the commercial and other bodies concerned, to be put into effect; and the Act is to be brought into force at a date to be notified by the Governor-General in Council. The important changes made by it are that the power to grant auditor's certificates has been transferred from the provincial Governments to the Governor-General in Council, and the power to allow members of specified institutions or associations to act as auditors without certificates has been abolished. It also provides for the appointment of an Indian Accountancy Board to advise the Governor-General in Council on all matters concerning the grant of certificates and to assist him in maintaining the standards of qualification and conduct required of auditors. These alterations were rendered necessary by the large increase which has taken place during recent years in the number of joint-stock companies operating in India, and in the range of their operations, which often extend beyond the boundaries of a single Province. It was thus desirable not only to ensure a high standard of professional qualifications amongst recognized auditors, but also to provide that this standard should be uniform throughout the country; and it is believed that the new Act should lead in time to the development of an autonomous association of accountants, able to assume complete responsibility for maintaining a proper standard of qualifications, discipline, and conduct amongst its members.

An International Conference, at which 47 States were represented, was held in Paris from the 5th of November to the 4th of December, 1929, with the object of concluding a Convention which would secure fair economic treatment for nationals and companies of one State carrying on business in the territory of another. India was represented at this Conference by Dr. R. P. Paranjpye, a Member of the India Council, as delegate, and by Mr. W. T. M. Wright, I.C.S., as technical adviser and substitute delegate. Owing to the complexity of the subjects discussed and the diversity of the opinions expressed upon them, the Conference in its plenary session did not arrive at any generally accepted conclusions; it therefore adopted a Final Protocol in which the delegates agreed to submit to their Governments all documents relating to its work, and to ask the Governments to forward their observations thereon to the Secre-

tary General of the League of Nations before the 1st of June 1930. It was decided that after the opinions of various Governments had been received, the material should be collated by the League for the purpose of a second Conference, to be convened, if possible, before the end of 1930.

The Lausanne Commercial Convention of 1923 between Turkey and the Allied and Associated Powers, to which India acceded, expired on the 5th of August 1929. Pending the conclusion of a complete Anglo-Turkish Treaty of Commerce and Navigation, His Majesty's Government entered into a *modus vivendi* with the Turkish Government providing for reciprocal most-favoured-nation treatment of subjects, goods and vessels. India has acceded to this arrangement, which came into operation on the 6th August, 1929.

CHAPTER VII.

Finance.

To those who are familiar with previous editions of this Report the first part of this Chapter will contain little that is new; but, for the benefit of fresh readers, it is necessary to reproduce without extensive modification the historical sketch with which we have been wont to preface our description of the year's financial events, since unless the student of Indian affairs is enabled to learn something of the course of the relations in financial matters between the Central and provincial Governments, he can hardly appreciate the full significance of the various political and administrative problems with which the rest of this volume is concerned.

Before 1870 all the revenues of India went into one purse, and the Provinces were allotted for their annual expenditure only those sums which the Government of India thought fit, or which it could be persuaded or cajoled into granting. In consequence the distribution of the public income became somewhat of a scramble, in which the advantage went to the most aggressive or persistent of the provincial administrations, without much reference to their real needs. But in the year we have mentioned, Lord Mayo initiated the radically important alteration in policy whereby authority began to be devolved from the Central to the provincial Governments, which has led, by a series of logical steps, to the creation of the quasi-federal system of administration under which British India is ruled to-day. Lord Mayo's solution of the financial problem was to give each Province a fixed annual grant for the administration of the provincial services, and to give provincial Governments an interest in nursing the taxable capacity of their subjects by allowing them to impose certain local taxes in aid of the grant from the Central Government. It was not long, however, before further changes were called for, and between 1877 and 1883 means were adopted for rearranging the provincial finances on a wider basis. For example, in the provincial settlements of 1870-71 a fixed sum had been made over to each local Government to defray the cost of provincial services, but by 1883 a share in the revenues had been substituted for the

fixed grant. This gave a margin which might be increased by careful management, and the settlements were made liable to periodical revision. The heads of revenue which were made over to the Provinces were believed to be capable of expansion; but it was recognized that revenue and expenditure in the Provinces could not be made to meet exactly, and the excess of provincial expenditure over revenue was made up by assignments from the Central Government expressed as a percentage of the land revenue of each Province,—which, apart from these deductions, constituted a Central receipt.

The system initiated by Lord Mayo persisted without fundamental change until the establishment of the Montagu-Chelmsford Reforms in 1921. The principal modifications introduced after the readjustments effected between 1877 and 1883 were the semi-permanent settlements which were made in 1904, and the permanent settlements made in 1911. By the former the revenues assigned to a Province were fixed, and rendered immune from alteration on the part of the Central Government except in cases of extreme necessity, or unless experience showed that the normal assignment made was clearly disproportionate to provincial needs. The object of this reform was to give the provincial administrations a sense of financial security, and, in addition, a motive for carefully husbanding their resources. Henceforward they could maintain some continuity of policy, since they were assured that they would reap the benefits of their own economies, and would have no temptation to embark upon ill-considered schemes of expenditure with the object of showing at the next settlement with the Central Government that their scale of expenditure was high and their needs correspondingly so. In 1911 the permanence of the provisional arrangements made in 1904 was definitely recognized; at the same time important changes were made in the apportionment of certain heads of revenue as between the Central and local Governments,—the share of the Provinces in expanding heads of revenue being increased, while the fixed assignments allotted to them by the Central Government were reduced. Provincial revenues had in any case benefited considerably by the introduction of the new Famine Insurance Scheme in 1906, by which the Government of India placed to the credit of each Province exposed to famine a fixed sum on which it could draw in time of need without trench-

ing on its normal resources; if this sum became exhausted, it was arranged that further expenditure would be shared equally by the Central and provincial Governments, and, in the last resort, that the Government of India would give the Provinces further assistance from Central revenues. In 1917 this arrangement was simplified and famine relief became a divided head, the expenditure being apportioned between the Central and provincial Governments in the proportion of 3 to 1. Before the scheme of 1906 was introduced, the liability for famine expenditure had lain upon the Provinces, and the Central Government had only intervened when the former had no resources with which to meet it.

Thus, at the time when the Montagu-Chelmsford Reforms were introduced, the financial relations between the Government of India and the provincial Governments were broadly speaking as follows. The budget of the Government of India was made to include the transactions of provincial Governments, the revenue enjoyed by the latter being mainly derived from sources of income which were shared between the Government of India and themselves, and thus known as the "divided" heads of revenue; these as a rule consisted in such items as the land revenue, excise, income-tax, and the profits from productive irrigation works. The provincial Governments however took the receipts from forests and registration, as well as from courts and jails, while to the Central Government went the revenue from customs, railways, posts and telegraphs, salt, opium, and tributes from Indian States. Out of these incomings, the Central Government was responsible for defence charges, for the upkeep of railways, and posts and telegraphs, for the payment of interest on debt, and for the Home charges; while the Provinces met from their resources the expenses connected with land revenue and general administration, with forests, police, courts and jails, with education and medical services. Charges for irrigation were common to both the Central and provincial Governments.

The introduction of the Montagu-Chelmsford Reforms in 1921, however, necessitated radical alterations in the arrangements we have described, since the establishment of the principle of dyarchy in the provincial administrations,—whereby the control of certain administrative subjects was transferred to Ministers responsible to

popularly elected legislative councils,—rendered the retention of the system of "divided" heads of revenue impossible; and this, as we have seen, was the most distinctive feature of the old arrangement, and the means whereby the Central Government maintained a large measure of control over the provincial finances. Thus, after 1921, the intermediate category of revenue heads had to be abolished, and a system devised under which only central and provincial sources of revenue remained,—these being clearly defined and altogether distinct from one another.

A tentative scheme for a financial settlement between the Government of India and the Provinces was sketched in the Montagu-Chelmsford report itself, which was presented to His Majesty's Government in 1918. The scheme comprised the complete separation of the central and provincial budgets, and the enlargement of the provincial powers of taxation and borrowing. It was on the whole attractive to the provincial Governments, since it was calculated to increase their financial powers substantially; but the division of the revenues between the Central Government and the Provinces in such a way that the Central finances would be exposed to a deficit which must be met by contributions from the Provinces, obviously had to be the subject of further enquiry. In Section 206 of the report, certain estimates were made of the anticipated deficit of the Central Government and the contributions to be made by each individual Province. The proposed basis on which the contributions were to be fixed was the difference between the gross provincial revenue and the gross provincial expenditure. Other possible bases of settlement had been examined and this had been chosen as being at once the most practicable and the least inequitable. The objections to it were obvious enough, since the Provinces with the most liberal scale of expenditure were likely to fare better than those which had been more economical. But this and other objections were considered only to be dismissed. The authors of the Report admitted that their scheme would, to some extent, confirm existing inequalities, but to mitigate this they recommended that the whole matter should be re-investigated by a Statutory Commission ten years after the establishment of the reforms. Actually, however, it was found impossible to leave the question open in this way, since some details of the proposals aroused vehement opposition. From Madras, for example, nearly

five times as much would be levied as from Bombay, and from the United Provinces nearly five times as much as from Bengal, while the Punjab and Burma would have to contribute far more than other and wealthier Provinces. In the first despatch on the proposed reforms which the Government of India sent to the Secretary of State in March, 1919, attention was drawn to the objections that had been raised against this aspect of the financial settlement, and the Government stated definitely that the permanent retention of the criterion proposed in the report for provincial contributions to the Central Government would be unjustifiable. It was accordingly urged that a committee should be appointed to investigate the financial relations between the Central Government and the Provinces; and this view was endorsed by the Joint Select Committee of Parliament which sat on the Reforms Bill. In consequence, the body known as the Meston Committee was appointed to advise on the contributions to be paid by the various Provinces to the Central Government for the financial year 1921-22, the modifications to be made in the provincial contributions thereafter until there ceased to be an All-India deficit, and the future financing of the provincial loans account. These terms of reference were increased at the instance of the Government of Bombay during the Committee's investigations in India so as to include the question whether the Government of Bombay should retain any share of the revenue derived from the income-tax.

The task of the Committee was in essence to arrange an ideal distribution of the deficit in the Central revenues among the Provinces, and to fix a standard scale of contributions to which the latter would work up by stages. A certain amount of preliminary work had been done for it by a conference of financial representatives of the different Provinces which had been held in September, 1919, during which the normal figures of revenue and expenditure of all the Provinces had been examined. The Meston Committee did not take long in deciding to affirm the view expressed in the Montagu-Chelmsford report that income-tax should be credited entirely to the Central Government. That report pointed to the necessity of maintaining a uniform rate for the tax throughout the country, and to the inconveniences, particularly to the commercial world, of having different rates in different Provinces; it further laid stress on the position of ramifying enterprises which

had their business centre in some big city and did not necessarily pay income-tax in the Provinces in which the income was earned. The Meston Committee, indeed, carried the second argument still further, and pointed to the case of public companies with shareholders scattered over India and elsewhere, and their decision, therefore, was that income-tax should remain a Central receipt. General stamps, however, they found to be a different matter. The Montagu-Chelmsford Report had argued in favour of making over the revenue derived from this source to the Central Government, but the Meston Committee found that this argument had not the same force as that relating to income-tax; for by crediting the receipts from general stamps to the Central Government, and the receipts from judicial stamps to the provincial Governments, a "divided" head was still retained in the financial system, since both general and judicial stamps were controlled by the same agency, and a good deal of miscellaneous work and outlay was common to both. If the "clean cut" between Central and provincial revenues, which the authors of the Montagu-Chelmsford Report had regarded as imperative, were to be effected, then general stamps must be made a provincial receipt, and this, accordingly, the Committee recommended. There were other strong arguments in favour of this course. The task of the Meston Committee was to assess, if possible, some contributions on each Province and yet leave it with a surplus. At the conference of September, 1919, it had been shown that Bengal, and Bihar and Orissa, had normally no surplus at all, while that of the Central Provinces was so meagre that no appreciable contribution could be taken from it. The Committee, therefore, in the case of Bengal and Bihar, was confronted with a task that was impossible at the outset, if the proposals made in the Montagu-Chelmsford Report were to be confirmed. But by giving to the Provinces the receipts from general stamps, the problem could be surmounted. Most of the Provinces naturally desired to be allotted a growing head of revenue such as general stamps, and its transfer would make the assessment of contributions much easier and, as between Provinces, less invidious. On the other hand, the adoption of this expedient would raise the deficit in the Central revenues considerably. Nevertheless in view of the circumstances of India at the time when the Meston Committee was at work, the balance of advantage lay

on the whole with the transfer of general stamps to the Provinces. It was felt that the settlement ought logically to treat all the local administrations alike, rather than depending on the grant of special subventions by the Central Government to some of them; and clearly the Reforms should not be allowed to start in Bengal and Bihar, and possibly in the Central Provinces also, with a demonstrably inevitable deficit. Therefore no other course seemed open than to increase the provincial sources of revenue by this particular means, despite the objections that could be raised to the provincialization of general stamps, owing to the necessity for having a uniform stamp duty for such instruments as bills of exchange, articles of association, transfers, shipping orders and share warrants.

Apart from the settlement of these two particular problems,—that is to say the allocation of the receipts from income-tax and general stamps,—the task with which the Meston Committee was confronted was to assess exactly what contributions the Provinces were to pay to the Central Government until such time as the necessity for the contributions disappeared with the disappearance of the deficit in the Central revenues. After carefully considering the figures provided by the conference of September, 1919, and receiving representations, the Committee fixed the sum which the Provinces between them were required to contribute at Rs. 9,83 lakhs. The total amount which the Provinces would gain and the Central Government lose as a result of the redistribution was estimated at Rs. 18,50 lakhs, and the figure of Rs. 9,83 lakhs was based on the necessity of leaving each Province with a sufficient margin to enable the new Councils to be inaugurated without the necessity of resorting to fresh taxation. After deciding what the aggregate contribution of the Provinces to the Central Government should be, the Committee had to settle the individual contributions of each Province towards the general total. At first the possibility of levying an even rate on the increase in spending power of all the Provinces was considered, but it was soon realized that this superficially equitable arrangement would cause hardship in some cases in view of the unequal financial strength of the Provinces. Each Province had to be considered on its merits, and the Com-

mittee drew up the following table as the proposed allotment of initial contributions.

Provinces.	In Lakhs of Rupees.		
	Increased spending powers under new distribution of revenue.	Contributions as recommended by the Committee.	Increased spending powers left after contributions are paid.
Madras	5,76	3,48	2,28
Bombay	93	56	37
Bengal	1,04	63	41
United Provinces	3,97	2,40	1,57
Punjab	2,89	1,75	1,14
Burma	2,46	64	1,82
Bihar and Orissa	51	*Nil*	51
Central Provinces	52	22	30
Assam	42	15	27
	18,50	9,83	8,67

Naturally this settlement did not please everybody; indeed, it pleased very few. A predominantly agricultural Province like the Punjab gained appreciably by having the whole of the land revenue allotted to it instead of only a portion as hitherto, but the more industrial Provinces like Bengal and Bombay were in a less happy position, since they provided the bulk of the revenue from income-tax and yet could not hope for any share of it. Madras, too, had special cause for complaint against the settlement. By far the heaviest initial contribution, namely, Rs. 3,48 lakhs, was demanded from this Province, and the Madras Government felt this sacrifice all the more keenly since, if its standard of public expenditure had not been maintained in the past at a comparatively moderate figure, its contribution under the reformed system of finance would not have been so great. Bengal and Bombay, on the other hand,

complained that they were now faced with the necessity either of reducing their standard of public expenditure or else of running into debt,—a process which the Central Government was not likely to allow to proceed far. However, the Government of India under the stress of its own over-riding necessity had no alternative but to adhere to the Meston Award, and so the Reforms opened with what some of the Provinces regarded as a crippling levy on their revenues. The Joint Select Committee of Parliament, however, made certain modifications in the Meston proposals. The scheme of standard contributions was rejected, and it was pointed out that the provincial contributions should be wiped out at the earliest possible moment. Further, it was directed that the Provinces should be given a small share in the growth of income-tax. It must be admitted that the years immediately following the Meston Settlement brought little happiness to the financial departments in the Provinces, but nevertheless the payment of provincial contributions was only partly responsible for this, since the country was at this time engaged as a whole in surmounting the many exceptionally difficult economic problems that arose as a result of the war. The greater part of the reconstructive work had to be undertaken by the provincial Governments, which also had to incur large expenditure in raising salaries to meet the increased cost of living and in creating new departments in accordance with the expansion of their responsibilities. The years following 1920 were therefore difficult both for the Provinces and the Government of India, and the provincial Governments were forced to look for relief primarily to the remission of the provincial contributions, for which there were frequent and vehement demands.

According to the plans that had been laid down by the Meston Committee and the Joint Select Committee of Parliament for the gradual abolition of provincial contributions, certain Provinces had priority over the others in this matter. The Committee gave Madras, the United Provinces, the Punjab, and Burma the first claim on remission, and not until almost half the total contributions had been remitted could any other Province claim relief. From that point onwards, however, every Province was to share in a prescribed measure in such relief as the Government of India could grant, until the contributions were altogether abolished. The first remission was effected in 1925-26, when, after showing a sur-

plus of Rs. 3,24 lakhs in his budget speech, Sir Basil Blackett made the welcome announcement that he proposed to employ Rs. 2,50 lakhs of this surplus for the permanent remission of provincial contributions. As a result, Madras received Rs. 1,26 lakhs, the Punjab Rs. 61 lakhs, the United Provinces Rs. 56 lakhs and Burma Rs. 7 lakhs. In the next budget statement, that for 1926-27, Sir Basil Blackett stated that a further sum of Rs. 1,25 lakhs would be permanently remitted to the same Provinces, and accordingly Rs. 57 lakhs went to Madras, Rs. 33 to the United Provinces, Rs. 28 to the Punjab, and Rs. 7 to Burma. In the following year the Finance Member declared a net recurrent surplus of Rs. 3,64 lakhs, and again he decided that the most suitable purpose to which the surplus could be applied was the remission of provincial contributions. The surplus of this particular year was only Rs. 1,81 lakhs less than the amount that would be required to abolish provincial contributions altogether; and this was actually achieved in the year 1928-29, when Sir Basil Blackett announced in his budget speech that the portion of the contributions which he had remitted temporarily for 1927-28 would henceforth be permanently remitted. The section of the speech which announced the permanent extinction of provincial contributions occupied only 12 lines in the printed report, and thus curtly and inconspicuously was accomplished one of the greatest triumphs of the reformed system of government in India.

Let us now turn to consider the more important features of the existing financial system which have no direct connection with the Meston Award, and have arisen either out of the original proposals of the authors of the Montagu-Chelmsford Report, or out of detailed arrangements effected between the Central and provincial Governments. Although the control of the Secretary of State over Indian finances is still considerable, and certain limits of expenditure are prescribed beyond which his sanction is necessary, his powers of intervention were nevertheless substantially curtailed by the Reforms, and can no longer be extended to cover the variety of comparatively unimportant matters, such as the expenditure of semi-official municipal bodies, in the way that was formerly possible. In the Provinces, the proposals of the Executive for expenditure in connection with "voted" heads have now to be presented to the Legislature as demands for grants, which may be either

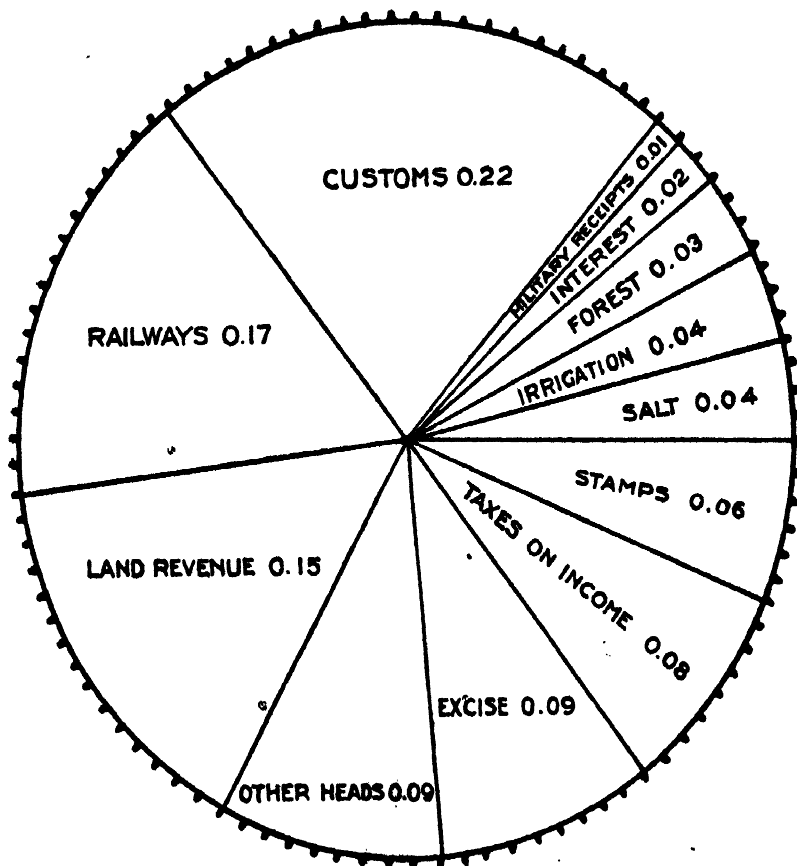
accepted, curtailed, or rejected; and the financial powers of the provincial Legislatures are thus real and considerable, despite the fact that as yet they have no control over contributions payable to Central revenues, charges on loans, expenditure prescribed by law, the salaries and pensions of officers appointed by or with the approval of His Majesty or by the Secretary of State, the salaries of High Court Judges, or, in certain Provinces, expenditure on "backward tracts,"—and despite the fact also that the Governor has certain over-riding rights to certify the necessity of various financial demands. Moreover the provincial Governments as a whole,—and apart from the question how far they are, and how far they are not, responsible to the Legislatures,—now exercise practically full control over their own sources of revenue, namely the provincial balances, receipts from provincial subjects, provincial taxation, proceeds and recoveries from loans, and the share of the income-tax received from the Province. The power to impose provincial taxation was also much enhanced under the Reforms, although it is subject in some respects to the previous sanction of the Government of India. In addition, whereas in pre-Reform days, provincial Governments were not allowed to borrow in the open market, and were discouraged from borrowing otherwise, their increased control over local affairs, especially on the "transferred" side, has led to material alteration in this respect; and they are now empowered, subject to the sanction of the Secretary of State in respect of loans raised outside India and to that of the Governor-General in Council in respect of loans raised inside India, to raise money in the open market on the security of their own revenues. In addition they are able to obtain loans from the Provincial Loans Fund, which was established by the Central Government in 1925. Certain important functions and responsibilities have also been allotted to the provincial Finance Departments under the new system. They are the custodians of the Famine Relief Fund, and must watch the provincial balances and advise on all important financial questions, such as proposals for new loans or taxation, the grant of new rights, assignments of land revenue, schemes for fresh expenditure, and the creation, modification, or abolition of posts. They also prepare the budget, lay the Audit Appropriation Report before the Public Accounts Committees, and ensure that audits are correct and effective.

As regards the Central Government, the position is rather different, since although wider financial powers were conferred upon it, also, under the Reforms, they are of degree only, not of kind, owing to the fact that the principle of dyarchy was not extended to it; and the Secretary of State still approves the Central Government's budget before it is presented to the Legislative Assembly, still sanctions new taxation, and still controls borrowings outside India, the gold reserve, the paper currency, the exchange policy, the pay, allowances and conditions of service of the All-India Services, and many other matters.

Before concluding our sketch of the existing system of Indian finance, we must not omit to mention a number of arrangements which have recently been made between the Central and provincial Governments, whereby the latter have benefited considerably. The creation of the Provincial Loans Fund in 1925,—to which we have already referred,—has been of great value in enabling the provincial Governments to borrow large sums on comparatively easy terms, and to use them,—subject to suitable safeguards on behalf of creditors,—for financing the particular schemes of development to which they attach importance. Another means whereby the position of the Provinces has been improved is the agreement that has been reached concerning the interest they are required to pay on loans. For some years the provincial Governments had complained that they were allowed no interest when they had credit balances with the Government of India. This grievance has now been removed, and provincial Governments may place money in fixed deposit with the Government of India and receive interest thereon. Similar adjustments have been effected in several other matters. For example, when it appeared in 1924 that the assignments made yearly to the Provinces on account of the sale proceeds of unified postage and revenue stamps had become inadequate, suitable increases were forthwith effected. Another project which has been receiving attention for some time is that of separating Central and provincial banking accounts; this, however, is obviously a matter in which it is necessary to move with especial caution, and hitherto no definite settlement has been made. Experiments have nevertheless been undertaken in the United Provinces by separating audit from accounts, and entrusting business connected with the latter to the provincial Govern-

How each Rupee of Revenue was made up in India in 1928-29.

(Provincial and Central together)



The Rupee of Revenue 1928-29.

[The basis of reckoning is the same as that on which the accounts and estimates are prepared; working expenses of the Railway, Irrigation, Posts and Telegraphs Departments, refunds and the like being deducted from revenue and not treated as expenditure.]

ment. At first the change was introduced in two departments only, —those of Education and Police,—but as it proved satisfactory it was extended to all departments in 1926.

This rapid historical survey will have enabled the reader to appreciate the salient features of Indian financial affairs; and from our description of the events of the last ten years it will be clear that despite the changes to which the whole system was subjected by the Montagu-Chelmsford Reforms, and the fact that their introduction,—which necessarily entailed substantial expenditure, in addition to re-organization and adjustments of a very complicated kind,—was effected at a time of exceptional difficulty, when money was scarce and confidence shaken owing to the economic consequences of the war, the country has nevertheless been gradually steered into a state in which the stability of its financial position gives reason for satisfaction.

We will now proceed to our description of the financial events of the period under review. As in previous years, this will be presented as far as possible in the form of quotations from the speech made by the Finance Member, the Hon'ble Sir George Schuster, K.C.M.G., C.B.E., M.C.,—in presenting his budget, since it would obviously be impossible to avail ourselves of any better or more authoritative means of enabling the reader to form a clear conception of the situation as a whole.

Sir George Schuster presented his second budget in the Legislative Assembly on the 28th of February, 1930. After referring briefly at the outset to the conditions during the preceding year, and to the question whether the gap caused by the final remission of the provincial contributions in 1927 had been filled, Sir George Schuster said:..." Turning now to the results for the current year 1929-30, though I can see no cause for anything like permanent pessimism for the future, there are many things which have increased the difficulties of the present. Failure of rains in some places, excessive rains with serious flood damage in others, combined with political uncertainties which have had an unsettling effect on commerce and industry have been factors special to India, while, at the same time, India has suffered from the general disturbance to world conditions caused mainly by the unprecedented stock exchange speculations in the United States followed by the sudden and sensational collapse in October... The collapse seems likely to

result in a period of business stagnation in America, which has already produced a serious fall in the prices of all commodities. While the effect of these events on monetary conditions in India has been apparent throughout the year under review, the effect of the fall in prices on trade and production is only now beginning to be felt...

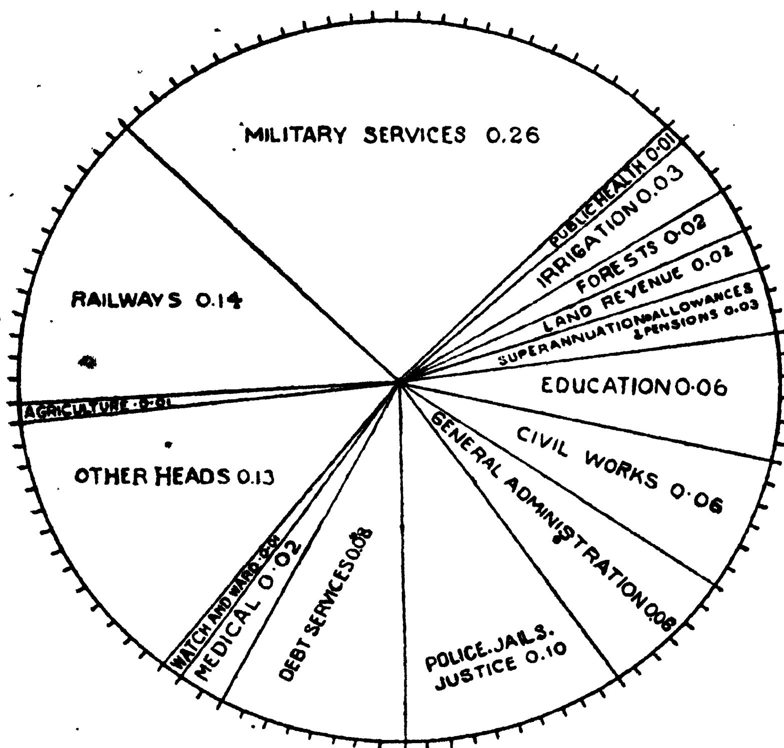
"The unfavourable factors to which I have referred, have, of course, been reflected in our budgetary results. There is a net deterioration of 66 lakhs as compared with the budget estimate, and this, combined with the original deficit of 90 lakhs, which... cannot be covered, as expected, by a transfer from the Revenue Reserve Fund, brings us to a total deficit of 1,56 lakhs. As against this, however, we can balance a special windfall, because we are able to bring into account a large sum held by us at credit of the German Liquidation Account under the Treaty of Versailles, which as a result of decisions arrived at at the Hague Conference, will now accrue to the Government of India. By a curious coincidence, this amount is 1,56 lakhs and exactly balances the deficit previously disclosed. On this basis, therefore, the year 1929-30 will close with an even balance.

"I do not, however, wish to give a misleading picture and we must fully realize that several exceptional receipts,—apart from this special wind-fall,—have contributed to the result..." Amongst these were unusual returns from the sugar import duty, income-tax, the jute export duty, and interest on the Gold Standard Reserve. "In any review of the position undertaken for the purpose of considering future policy, it is necessary to eliminate exceptional items of this kind. If on this basis, we examine the position since the final remission of the provincial contributions, we find that in 1927-28 there was an actual deficit of 2,21 lakhs; in 1928-29 a deficit of 1,06 lakhs; while, for 1929-30, the figures which I have given sufficiently clearly explain the position. These results indicate that, taking into account the unavoidable increase in expenditure, and even making allowances for the present depressed trade conditions, the gap caused by the remission of the provincial contributions has not, on a normal estimate of revenue and expenditure, been fully filled.

"I must now turn to the prospects for the next year,—1930-31, —so arranging my statement as to indicate, as clearly as I can,

How each Rupee of Expenditure was made up in India in 1928-29.

(Provincial and Central together.)



The Rupee of Expenditure 1928-29.

[The basis of reckoning is the same as that on which the accounts and estimates are prepared; working expenses of the Railway, Irrigation, Posts and Telegraphs Departments, refunds and the like being deducted from revenue and not treated as expenditure.]

the main framework of the problem with which we have to deal. I will start with certain preliminary explanations. First, on a matter of detail, in the figures which I am now going to give,... I shall eliminate receipts on account of the two-anna petrol tax which are off-set by the block grant on the other side to the Road Development Fund. Secondly, in my forecast for next year, I am not taking into account the possible effects on revenue of serious disturbance or the practice of civil disobedience... Nevertheless, I cannot avoid taking some account of the reaction of the attitude of certain political leaders and parties on business conditions in the country, for, to some extent, that reaction is already an established reality. A serious blow has been given to confidence, both within India and outside it, by the doctrines preached in December last at Lahore and since then throughout the country. In saying this, I refer not only to the threat of repudiation of debts,—which I am convinced that no responsible Indians take seriously,—but, also to the general programme of civil disobedience and the attitude of hostility to the British connection and British interests...

"Translating this view into a practical appreciation of the budgetary prospects for next year, I am forced to the conclusion that, even allowing for a reasonably good monsoon, the prospects of trade cannot be regarded as very bright. World conditions are against us and the chances that business in India can develop favourably in spite of these adverse factors, are very seriously reduced by the blow to confidence in new enterprise which has been given by the conduct to which I have referred."

Sir George Schuster then proceeded to give his forecast of the yield from customs, income-tax, salt, and opium, and concluded that on the basis of existing taxes there was likely to be a net increase of no more than 5 lakhs as compared with the budget estimate of the year 1929-30. He continued:—"Turning to departmental transactions, this House is already aware that the contribution from the Railways to general revenues is likely to be less satisfactory than in recent years. The total is estimated at 5·74 crores, as compared with the budget figure last year of 6·25 crores, showing a net deterioration of 51 lakhs. In Posts and Telegraphs, prospects for next year are likewise unsatisfactory. It is necessary to anticipate a deficit of 48 lakhs on the Indian Posts and Telegraphs Department and of 8 lakhs on the Indo-

European Telegraph Department. Taking into account the capital expenditure charged to revenue, the net deterioration as compared with the budget estimate of the current year is 48 lakhs...

" I will now turn to the main heads of expenditure. In dealing with this, I intend, throughout my remarks, to draw a distinction between normal administrative outgoings and those other heads such as Debt Services, where we have to meet either charges for the service of our loans or make provision for redemption or security...

" Having drawn the distinction between these two kinds of expenditure, I will...examine the former, namely, the whole field of normal administrative expenditure. It is on our action in this field that I expect and, indeed, desire Honourable Members to turn their most critical scrutiny. There is a general demand for retrenchment and economy on the one side, and, on the other there is the persistent and insistent pressure for increased expenditure on particular projects, such as improvement of conditions of service, education, hospitals, and sanitary arrangements, agricultural endowment, police measures, roads, etc., and very often those who press most vehemently for retrenchment in general, are among the strongest supporters of particular proposals for new expenditure "... Here, I " merely wish to give some indication of the total amount of new demands for which, after most careful scrutiny and rigid exclusion of everything that is not necessary, we have thought it essential to provide. In what I have now to say, I shall be comparing the budget estimates for next year with the budget estimates for 1929-30, because it is in this way that I can most clearly present the problem.

" In the first place, there are the normal increments in rates of pay for the existing staff of Government officials. Now that a time-scale basis has been adopted in practically all Departments, this is an inevitable commitment, and, unfortunately, we have not yet approached anything like the peak figure... But I am satisfied, after careful investigation, that a fairly reasonable estimate of the total increase under this heading, as compared with the budget estimates in the current year, is 25 lakhs.

" Apart from this, there are a number of new demands of a special nature," such as those connected with census operations, the grant to Aligarh University, the recurrent grant for Agricultural research, the special fund for assisting the sugar industry,

the expenses of the Banking Enquiry and the Royal Commission on Labour, the development of the Territorial Force and of civil aviation and so forth, which, "together with the sum of 25 lakhs representing the increase on account of increments of pay, bring the total of the new expenditure, for which we have to make provision in the budget, to 1,46 lakhs. These items are those in regard to which the Government's policy as regards economy is chiefly to be tested.

"I must turn now to those headings of expenditure which fall into the other class, and I would refer chiefly to the Government's debt obligations... Interest on Ordinary Debt shows an increase of 46 lakhs, partly as a result of larger treasury bill transactions, and partly because larger provision has been made for the cost of conversion operations. Interest on other obligations, including provision for cash certificates on the basis which has hitherto been adopted, shows an increase of 61 lakhs, of which 15 represents higher rates of interest to be allowed on Provident Fund balances and 21 is accounted for by higher borrowing rates.

"Interest receipts are put at the same figure as in the budget estimate for the current year, 3·45 crores, and here I would explain that we propose, in future, to adopt a more conservative system as regards the Gold Standard Reserve interest. We propose, in fact, to treat £1,600,000 as the standard figure of revenue. If, in any year, the actual receipts exceed this sum, one-half of the surplus will be added to revenue and one-half will be transferred to an Equalization Fund, which Fund will be available to be drawn upon to make the receipts up to the standard figure of £1,600,000 in any subsequent year in which they fall below that level... The actual receipts for 1929-30 are estimated at £2,400,000, and out of this sum it is proposed to make a start by placing £100,000 to the credit of the Equalization Fund. For the coming year, we estimate the receipts at £1,700,000, so that, acting on the rule which I have stated, we propose to include £1,650,000 in the budget estimates of revenue, and to transfer the balance of £50,000 to the Equalization Fund. I am convinced that this proposal represents a great improvement in our system and is in accord with principles of sound finance...

"I now come to the subject of the special provision to meet our liability in regard to Post Office Cash Certificates. The amount which we calculate as likely to be payable next year in respect of

bonuses is 1 crore... I have carefully calculated... what the full amount of the liability, which will accrue during the next year, will be, and it comes to a figure of 1,88 lakhs. If, therefore, we are to make full provision for this accruing liability, we ought to find another 88 lakhs for the purpose, and it must be remembered that this will only cover the liability accruing during the year and will include no provision for meeting the liability which has already accrued. I have come to the conclusion that this accrued liability must be regarded now as part of the Government's debt and that, having regard to the provision which we make annually for reduction or avoidance of debt, the situation in regard to this is not unsound..."

Sir George Schuster next approached the question of providing for the reduction or avoidance of debt, and stated that he had come to the conclusion that this subject, and the arrangements made in connection with the Railway Convention, were so closely connected that they ought to be reviewed concurrently. "My reason for this view is shortly as follows. According to the present Convention, the Government receive in addition to the refund of the actual interest which the Government have themselves to pay on loans raised for Railway purposes, a contribution, which, although it is made up of various elements, may be regarded as a percentage on the capital advanced to the Railways. Looked at in this way, it represents the distribution of even less than 1 per cent. on the Government debt, which forms the basis of the present provision for reduction or avoidance of debt. In fact, I think it is, on broad lines, correct to regard the one as balancing the other, and we shall arrive at a truer picture of what the Government draw from the Railways if we realize that, in fact, the Government get no profit but apply practically all that they receive, apart from a refund of their own interest payments, for the amortisation of their capital. When, therefore, the contribution falls below a certain figure, the Government, if they made up their accounts on a profit and loss basis, would actually show a net loss on the year. I feel most strongly... that this is not the time when, keeping in view our credit in the world, we ought to attempt any substantial diminution in our provision, for reduction or avoidance of debt. Anything that savours of a 'raid' on a public Sinking Fund is normally,—and, I think, quite rightly,—viewed with disfavour. I hope, therefore,

that I shall have general agreement...that it is better to leave this provision substantially untouched; and to bring it under review at the time of the general revision of finances including a redistribution of the sources of revenue as between the Central Government and the Provinces, which must be sequel to the proposals of the constitutional revision which will shortly be before us.

"I have, however, thought it justifiable to introduce two small changes in our present system..." These consisted in an alteration, firstly, in the treatment of Reparation receipts, and secondly, in the rupee equivalent on which the percentage for reduction or avoidance of part of the sterling debt had been based. But "even allowing for these two changes, the increase in the provision for reduction or avoidance of debt is 27 lakhs, the total amount standing at 6 crores as compared with 5·73 crores included in the budget estimates for 1929-30.

"I can now recapitulate the position in order to show the problem with which I have to deal in balancing the Budget next year. Comparing our position with that provided for in the budget estimates of 1929-30, I have to provide for the following items of deterioration:

	Lakhs.
Deterioration in the main Commercial Departments, Railways and Posts and Telegraphs	99
Essential new services and demands	1,46
Net addition to interest on dead-weight debt	1,07
Special provision for bonus on Post Office Cash Certificates	88
Increase in provision for reduction or avoidance of debt	27
To these items must be added the budget deficit of 1929-30	90
This gives us a total of	5,57
Against which the net improvement on the main revenue heads is only	5
There is thus a total gap to be filled of	5,52

The problem before us is how to fill this gap.

"In the first place, I must make clear the principles on which I have endeavoured to act this year in dealing with expenditure demands. I have set before myself two guiding rules. The first is that no new administrative expenditure shall be admitted which is not either essential or productive; the second, that whatever new

expenditure is admitted on these grounds must be balanced by corresponding economies. There must, in fact, be no net increase in the normal out-goings of the Government. These rules have been followed in my proposals.

"In stating my problems, I have shown that the essential additions for new services and demands amount to 1,46 lakhs, and, according to my rule just stated, this must be balanced by corresponding economies. Actually, as a result of the elimination of certain previous non-recurring items and of other variations, there is an economy in the civil estimates of 62 lakhs, and, on top of this, I am providing for a reduction of military expenditure of 80 lakhs, that is to say, the net military grant, apart from expenditure on the Territorial Force, will be reduced from 55 crores to 54·20. These two reductions together account for 1,42 lakhs against the new expenditure of 1,46....

"I must, at this stage, say a few words" on the reduction in military expenditure. "In the course of my budget speech last year, I explained that, in order to enable the Army to carry through their plan of re-equipment, a programme had been arranged, providing for a stabilised military budget (exclusive of the expenditure on the Territorial Force) at a net figure of 55 crores for the four years beginning 1928-29 and ending 1931-32. According to this programme, we should have before us two more years at 55 crores, with the prospect of a reduction at the end of that period when the programme of re-equipment is completed. In the budgetary proposals which I am now presenting, we are taking advantage immediately of part of the ultimate reduction. This is made possible because the Army authorities have been able to agree to spread the programme of re-equipment, which remains to be carried out, over a period of three years instead of two. This means that instead of getting 55 crores in each of the next two years, to be followed by a drop in the third year, they are to work on a basis of getting 54·20 crores for each of the next three years, after which a further substantial drop is anticipated.

"I may now turn back to my problem. The two items of savings to which I have referred amounted to 1,42 lakhs. This reduces the gap of 5,52 lakhs, which I have to find funds to fill, to 4,10 lakhs. This can only be done by finding new sources of revenue...

"The sum required is substantial... I believe, however, that it can be found by measures which not only will not impose an oppressive burden on any class, but will, in their indirect results, actually stimulate the country's economic development. The measures which I shall propose include changes,—reductions as well as increases,—in the customs duties affecting rice, cotton piece-goods, kerosene, sugar, and silver, supplemented by a small change in the income-tax.

"I will start with a proposal for reduction of duty. I am proposing...a reduction in the export duty on rice by one-quarter, that is to say, from three annas a maund to two annas three pies a maund. There has been...a world-wide fall in the price of rice, and the present time is therefore opportune for giving some help to the cultivator in Burma who has been a sufferer from this fall in prices. My proposal will remove the disparity, which at present exists, between our export duty on rice and that imposed by Siam, one of Burma's principal competitors in the trade. This proposal will cost us 30 lakhs,"...and means "that the gap which I have to fill is increased to 4,40 lakhs.

"I must now explain my proposals for raising the necessary new revenue, and I will make a start with the most difficult question which we have had to consider,—the cotton duties. Here two motives come into play,—first, the provision of revenue; second, assistance to the Indian cotton mill industry. Action taken for the provision of revenue is a straight-forward matter, but the consideration of protective measures raises much more serious difficulties. Let me state, as briefly as I can, how these difficulties have appeared to us.

"In the first place, the whole question of protection of the cotton industry was investigated by the Tariff Board a comparatively short time ago, but the case which has now been presented on behalf of the mill-owners claims a measure of protection greatly in excess of anything recommended by the Tariff Board. In these circumstances, a further enquiry might reasonably be considered desirable. But, as against this,...the case is urgent, and,...if action is to be effective, it ought not to be delayed. In the second place, the conditions affecting the industry are not identical throughout India. Bombay is at once the most important centre of the cotton mill industry, and the centre more seriously menaced

by foreign competition... In the third place, as was pointed out by the Tariff Board, the increasing competition from the up-country mills is one of the most important factors contributing to the depression in Bombay. Therefore, whatever measure of assistance is accorded to the industry as a whole, it is likely to be ineffective ensuring permanent recovery to Bombay, unless the industry there seizes the opportunity afforded by that assistance to reorganize itself and increase its efficiency.

"Moreover, there is another aspect of this question in which the public and the Government are greatly interested. Bombay has been the scene, during the last two years, of a prolonged and exhausting struggle between capital and labour... This consideration has, in the present case, a special significance, for Government are being asked to take emergency measures, not to protect an industry in the early stages of its development until it can find its feet, but rather to save an industry (or, more accurately, one important section of it) which is suffering from a special deterioration or atrophy.

"The conclusions which we reached fall under two heads; first, that, in view of the revenue position, a general increase in the revenue duty from 11 per cent. to 15 per cent. was justified; secondly, that while this increase in revenue duty must have an important protective effect, it might be justifiable to supplement it by some special protective measures, provided that, having regard to the special circumstances to which I have called attention, such measures were limited in duration, and also limited to purposes necessary to meet the immediate needs of Bombay...

"It is, of course,...well known...that, in all public comments on policy as regards cotton duties, the possible reactions on British interests are always prominently mentioned, and that we as a Government are often suspected of undue solicitude on this account. Having regard to the long and troubled history of the cotton duties in India, and to the public interest in the matter, it has been our desire to put before this House as full and frank a statement as possible. Let me make it clear at the outset that the fiscal autonomy convention is a reality, and that decisions on matters of this kind are left to the Government of India, and it is on this basis that our deliberations have proceeded throughout. But, in the final stages, there has been addressed to us a communication, not

by the Secretary of State, but by His Majesty's Government, to reconsider the position.

"In this message, His Majesty's Government asked us to take into account both the reactions of our proposals in India and their serious effects in England, effects which they felt sure that neither we nor the Legislature would desire to create. To this we replied that, though we were deeply impressed by a message of this nature, we nevertheless felt bound to adhere to our main proposals. We pointed out the following considerations; first, that we needed revenue; secondly, that customs is our chief source of revenue; thirdly, the duty on cotton piece-goods now stood below the level of the general revenue tariff; fourthly, Indian industry was suffering from a deep depression and the Bombay mills were approaching a desperate position which might affect the whole future of this important centre of Indian commerce and finance. We recognized and deplored the possibility of serious effects in England, but we stated we felt clearly bound to put India's interests first. At the same time, we realized how important it was to India, from the political point of view, to take account of British opinion, and that, quite apart from this, we were of course concerned at this time to avoid unnecessary injury to British interests. We stated that, after careful consideration, we had decided that we could not modify the general application of the 15 per cent. revenue duty, but that we should be prepared to propose to the Assembly that, as regards any additional and temporary protective measures, their application might be limited to non-British goods, and that, in these circumstances, there should be imposed, in addition to the 15 per cent. revenue duty, a 5 per cent. protective duty with a minimum of 3½ annas per lb. on plain grey goods, against all cotton piece-goods from outside the United Kingdom, this protective duty to be in force for three years only, and an undertaking to be given that we should have its effects examined by the Tariff Board before the end of this period. We explained that, in placing this proposal before the Assembly we should point out that, so far as we are aware, this is the first occasion on which the considered opinion of the Cabinet has been conveyed in this form to the Government of India and that we were impressed by the significance of the precedents so established.

"We informed His Majesty's Government that it would not be right for us to ask the Assembly to commit themselves to Imperial Preference as a principle, but merely to adopt a particular course which, in our judgment, was consistent with India's interests at a critical juncture when much might depend on India's response to the British Government's appeal. We also stated that we should have to make it plain to the Assembly that, while there were grounds for treating plain grey goods specially, we could not, in any circumstances, agree, for the emergency purpose which we had in view, to an additional protective duty of 5 per cent. on all classes of piece-goods irrespective of country of origin, since the immediate benefit to the Indian producer would be wholly incommensurate with the burden imposed on the Indian consumer. Finally, we made it clear that, in a matter of this kind, after frankly stating our conclusions, we should desire to put our carefully considered views before the Legislative Assembly with whom the final decision must rest...

"It is, of course, obvious that these proposals will evoke very considerable comment and will be subjected to the closest and most critical scrutiny. This we shall welcome; but it will not suffice to keep in view only those factors which, in ordinary times, might be held decisive, for the times are not ordinary. Within a few months, the representatives of India will meet the representatives of Great Britain to discuss, in the fullest and frankest way, the future of this great country, and much must depend on the spirit in which they meet. I would ask Honourable Members to give full thought to the grave importance of these wider considerations. It is obvious that any gesture of friendship which India can spontaneously and without compulsion make to the British Government in their own present grave industrial troubles, is bound to strike a responsive note. For our part, our conviction is that, if our proposals are examined without prejudice, they will be found to be better adapted to India's needs than any other scheme we could put forward...

"In the first place, what we are aiming at in our present measures, is not to settle the policy as regards protection of the cotton industry for the distant future. We are concerned only with providing a temporary shelter under which the industry, especially in Bombay, may firmly establish its position in respect of the business for which it is already equipped... There is therefore

no relevancy for our present purpose in contentions that, taking a long view, the Bombay industry requires to organize itself for the manufacture of the finer goods, and that our present proposals will not help in this direction. Whether such a view is right or not, it could not be translated into the immediate effect which is so necessary. Looked at from this point of view, it has appeared to us that our proposals do exactly meet the needs of the case. The imposition, in addition to the increase in the normal duty, of a special additional protective duty against non-British goods, of a 5 per cent. all-round surcharge, combined with the minimum of 3½ annas per lb. on plain grey goods, must operate effectively in just that portion of the field where competition is most severely felt. A study of the statistics makes it abundantly clear that it is not competition from British goods which is now being severely felt, nor has Bombay lost any business recently as a result of such competition.

"In the second place, I must, on behalf of the Government of India, make it clear that we could not feel justified in imposing for revenue purposes a higher duty than 15 per cent. and that, so far as the protective measures are concerned, it is only if their scope is limited, in the way that we propose, that we could agree to carry them so far. As I pointed out at the outset, we cannot disregard the interest of the consumer and it is contrary to all sound principles to impose a protective duty, putting a heavy burden on the consumer, if the benefit to the producer must be small or negligible.

"I must, before leaving this part of the subject, emphasise again one vital point which we have made. We do not, and in fact, we could not, ask this Assembly to commit themselves, at this stage, to accepting the principle of Imperial Preference. We ask them to regard this proposal merely as a special measure designed to meet the immediate emergency. It is, acting in this spirit, that we propose that the special protective duties shall be imposed for a period of three years only, and that, at a convenient date before the termination of this period, their effect, and the whole position of the industry, shall be re-examined in a Tariff Board enquiry. Lest it may be argued that such an enquiry should have preceded our proposals, I must explain that we gave our careful consideration to this point and decided that, quite apart from the urgency of the need for action, a further investiga-

tion by the Tariff Board at the present juncture was not advisable. It is the special duty of the Board to investigate facts and arrive at findings thereon. But owing to the labour disputes of 1928 and 1929, it is more than doubtful whether any material for investigation, beyond that available to the Tariff Board of 1926, exists. Again, conditions in the Bombay mill industry have, since 1926, been examined by the Tariff Board, the Fawcett Committee, and the Pearson Court of Enquiry, while trade conditions have recently been investigated by Mr. Hardy. In these circumstances, we felt that the proper time for a further enquiry by the Tariff Board will come when some progress in reorganization and rationalisation has been made by the industry in Bombay, and the prospects of ultimate success or failure of the industry can be assessed...

"We estimate that the net increase in revenue from our proposals, allowing in full for the protective effect, will be 1,25 lakhs.

"My next proposal is to increase the excise duty on kerosene from 1 anna to 1 anna 6 pies per gallon, coupled with a reduction in the import duty from 2½ annas to 2 annas 3 pies. This combined proposal is expected to give us an extra 35 lakhs. At present, there is a difference of 1½ annas per gallon between the excise duty and the import duty on kerosene and the effect of the proposal now made will be to reduce that difference by one-half. In framing our proposals regarding kerosene in this form, we have kept two objects in mind: first and principally, we have desired, simultaneously with getting more revenue, to make a change which should, at the least, ensure that the price of ordinary kerosene to the consumer is not increased, while secondly, we have felt that prudence and justice demanded that we should not make too sudden and drastic a change in the conditions of the indigenous industry, having regard particularly to the position of the smaller companies. Moreover, too drastic a change might hamper further development. In reducing the margin by one-half we have thought that we have gone as far as it would be wise to go, at least as a first step. It means that the marginal duty in favour of the indigenous industry will be reduced from about 18¾ per cent. to 9¾ per cent.

"The next proposal which I have to mention is an all-round increase in the import duty on Sugar of Rs. 1¼ per cwt. I am not proposing any change in the existing classification, so that

the effect of the proposal will be that sugar of 23 Dutch Standard and above, which at present pays duty at the rate of Rs. 4½ per cent., will pay duty at Rs. 6 per cwt.; sugar below 23 Dutch Standard but not inferior to 8 Dutch Standard will pay at Rs. 5½ per cwt., instead of at Rs. 4, and sugar below 8 Dutch Standard and sugar candy, which at present pay at 25 per cent. *ad valorem*, will be subject to a composite duty of 25 per cent. *ad valorem plus* Rs. 1½ per cent. Molasses, which is dutiable at 25 per cent. *ad valorem*, will remain subject to duty at that rate and will be treated separately from sugar, since its use is mainly as a raw material for industries and, in fact, a Tariff Board enquiry as regards its treatment as a raw material used in the manufacture of denatured spirit, is already in progress... The increased duty on sugar should yield 1,80 lakhs; but, in estimating its effect upon the consumer it is necessary to bear in mind that the world price of sugar is exceptionally low. The average landed cost of sugar in India from April to December last was no more than Rs. 8·6 per cwt., whereas the average for the previous six years has been Rs. 12·25 per cwt., a difference of about Rs. 3½ as compared with the proposed increase of Rs. 1½. Thus, even the comparatively large increase now proposed should not at present be seriously felt by the consumer. Ultimately it may...have some protective significance; but, for the present, it must be regarded primarily as a revenue-producing measure. However, an increase in the production of sugar is one of the most valuable opportunities available for improving India's agricultural production, and with this possibility in view, we are proposing a special grant this year of 10 lakhs (to be continued, if necessary, in subsequent years) for the encouragement of sugar research and sugar production. These two proposals must be considered together.

"I next propose to obtain an additional 70 lakhs by a small change in the rates of income-tax and super-tax. When we are seeking new sources of revenue, it should not all be raised by indirect taxation; at the same time, I recognize that this is not a suitable period for imposing any heavy additional burdens which would be felt in industry or commercial enterprise. Our proposal, therefore, is that, on personal incomes of Rs. 15,000 and upward, the income-tax rates shall be raised by 1 pie in the rupee, and a corresponding increase shall be made in the super-tax in all grades, other than the flat rate of super-tax on companies. The

additional yield from income-tax is estimated at 56 lakhs and that from super-tax at 14 lakhs.

"The total yield of the taxes which I have now mentioned amounts to 4,10 lakhs, so that I am still left with 30 lakhs to find. I consider, however, in the special circumstances now prevailing, that it is on every ground desirable to have some margin of safety... With this and other objects in mind, I propose to re-introduce the import duty of 4 annas per ounce on silver... An import duty on silver is a familiar feature in the history of Indian fiscal policy. Prior to 1919, silver bullion and coin other than coin of the Government of India, were included in the general tariff schedule of articles liable to an import duty of 5 per cent. *ad valorem*, and in that year, the rate was raised to 4 annas per ounce. During the war, the import of silver was prohibited, and after the war, in pursuance of the recommendation of the Babington-Smith Committee, the duty was removed at the same time as the prohibition of import. The Committee advocated the removal of duty mainly on account of the strong feeling in India that it was an obstacle to the establishment of a world market for silver in Bombay and placed the Indian consumer of silver at a disadvantage in comparison with the consumer in other countries. I have given full weight to these objections, but circumstances are different to-day. It is proposed to meet the former objection by allowing a full rebate of the duty on re-export of any silver which has been imported and has paid duty. As to the latter objection, we feel now that there is a strong counterbalancing advantage in taking a step which will have the immediate effect of improving the internal price of a commodity in which the savings of the masses are to a considerable extent invested. The recent fall in the price of silver has, in fact, put an entirely new aspect on the matter.

"Apart from this, there is another important new factor in the situation, in that the Government, owing to their possession of surplus stocks of silver and the erection of the new refinery at Bombay, have got into the position of being themselves important "producers" of silver. Our proposal, therefore, has the new incidental advantage of providing Government with a protected market for their own produce. Having said as much as this, however, I must say more in order to avoid the creation of any misunderstanding. I feel that it is important that the masses of India, who invest so large an amount of money in silver,

should realize that silver is only an ordinary commodity, liable to fluctuations in price, just as other commodities are. It has no sacred properties which make it immune from these vicissitudes, and although the Government, in taking these measures, have in mind, as one of the main advantages, an improvement in the internal value of silver, we should, in the long run, be doing a very poor service to the population of India if we allowed it to be supposed that the Government have the power definitely to maintain prices at a particular level... If there is any danger of the world's production of silver exceeding the consuming capacity of all markets, then, of course, there must be a tendency to falling prices. Only the combined action of producers and holders can prevent this...

"While our reasons for imposing the duty are, as I have explained, of a special nature, I am also prepared to say that special circumstances will govern our intentions as to the disposal of the revenue produced. We must, as I made clear, regard the proceeds primarily, at the present stage, as a reinforcement of the general financial position of the Government; but, if our estimates as regards the other heads of revenue are realized, and there is a surplus resulting from the imposition of the silver duty, then we have a special purpose in mind for the application of that surplus. We regard this duty, principally, in fact, as a measure which will give us a margin of revenue from which we shall be able to make a distribution to provinces after the forthcoming statutory revision to give them the funds which they require for nation-building services. Additional funds are chiefly required by the provinces for such purposes as economic and agricultural development and primary education."

The yield from the re-imposition of the import duty on silver was estimated by Sir George Schuster at 1 crore, and on this assumption the budget estimates provided for a surplus of 70 lakhs of revenue over expenditure. And as the budget proposals other than those relating to income-tax came into effect forthwith, the revenues of the year 1929-30 benefited to the extent of 35 lakhs, which amount accordingly appeared as a revenue surplus in the revised estimates.

Sir George Schuster continued: "It is of course obvious to me that these proposals will be subjected to the most searching

scrutiny, and the question which will be asked is whether there is any justification for imposing so heavy an additional burden of taxation... Before this question is put, I would ask Honourable Members to pause and consider carefully what item of taxation in my proposals does not offer at least some indirect advantages. I venture to say that, with perhaps the sole exception of the income-tax proposals, such advantages will be found. But that is not by itself a sufficient answer, and it is necessary to examine the position further, and attempt to frame some interpretation of the symptoms of the present financial conditions. For, if the short-fall of revenue is merely the result of a temporary combination of abnormal circumstances, then one must hesitate to impose the full corresponding burden of permanent taxation, and it might be justifiable to adopt temporary expedients. If, on the other hand, there is a permanent and unavoidable shortage of revenue, then the position must be tackled boldly in order to establish, before it is too late, a sound foundation.

"In order to judge whether the present condition is permanent or not, there are two main aspects to be examined, that is to say, one must ask, on the one hand, whether the expenditure required this year is abnormally high and capable, either now or in future years, of reduction, and, on the other hand, whether the revenue anticipated is below the normal expectation owing to special circumstances which are unlikely to be repeated.

"I will deal first with administrative expenditure. In regard to this I have, in accordance with an undertaking which I gave to the Assembly in my last budget speech, conducted...a close...survey of the growth of expenditure during the past five years, and I have come to the conclusion that...we cannot count on being able to find any substantial margin for reduction in the cost of the civil administration of the Central Government. In fact, with all the new services and heads which are being pressed for consideration, it is only by the exercise of the most rigid control that we shall be able to keep the growth of expenditure within bounds"... Moreover, "the Government have become committed, in the past years, to time scale systems of pay, the full effects of which were not perhaps appreciated at the time when they were granted. These put upon us definite and unavoidable commitments, and I have already indicated that the normal rate of increase under this heading amounts to something like 25 lakhs per annum.

"These remarks cover one kind of growth in expenditure. But I shall be asked whether, even admitting that this kind of growth is inevitable, it is not possible to make large cuts in the number of appointments and in the amount of the personnel employed... I doubt whether it is adequately realized to what an extent the gradual development of the present form of constitution is placing increased work on the shoulders of the officials of the Central Government, and I do not think it is an exaggeration to say that there is not a single Department of the Government of India in which those occupying the higher appointments are not at present overworked... I may, however, again be asked whether there is not a possibility of a different form of economy in the shape of elimination of certain services. My reply would again be that, unfortunately, it is only too likely that the move will be in the other direction. We are, in fact, at present faced with the need for meeting the demands of a large number of new services. The development of agricultural research, for example, is an entirely new demand, as also is that of civil aviation. The former is one which may be fruitful of great benefit to the country; the latter is necessary unless India is to lose her place among the civilized nations of the world. Moreover, it brings in its train other needs such as the development of meteorology and wireless organization. Again, if we look back on the cuts that were made during the last retrenchment campaign, I think it will be generally admitted, as proved by experience, that, in some respects at least, the economy has not been worth the sacrifice. Public opinion generally seems to be awakening to the desire that the Government of India should adopt a far more active and constructive economic policy than it has followed in the past, and that, in many matters, the Central Government should take upon themselves the responsibility of giving a lead and assistance to the Provincial Governments. ... Moreover the Central Government are directly responsible for the administration of certain areas, and I am afraid that one cannot resist the conclusion that the standard of services provided for in those areas, has, in many respects, been allowed to fall behind that prevailing in the neighbouring areas under Provincial Administrations. This is not a state of affairs which the Central Government can view with equanimity...

"If I turn now to those other kinds of expenditure to which I have referred, namely, those measures for the support of sound

financial principles and the provision of adequate reserves against our obligations, I could not honestly put before this Assembly proposals less adequate than those which I have framed. It is, in my view, of vital importance that, at this stage in India's constitutional development, when we stand at the threshold of a new constitutional advance, nothing should be done which would suggest to the outside world that India's credit will be less carefully preserved in the future than in the past.

"Turning now to the revenue side of the picture, it may be said that the estimates which I have presented...imply, first, the expectation of a set-back in the tax revenue, and secondly, a... decided worsening in the position of the Commercial Departments of the Railways and Posts and Telegraphs. I am prepared to admit that it is...arguable that the picture which I am presenting is abnormal and likely to be improved in future years. But, for many reasons, I feel sure that it will be unwise to allow such an argument to prevent the introduction of new taxes sufficient to meet the situation... In the first place, some of our present sources of revenue are likely to disappear, and, in the case of others, reductions may become desirable... Again, new needs for expenditure are constantly likely to press upon us and I have already referred to some of the new services which are now being developed. Yet another consideration is this. We have, in my opinion, been working, in the past three years, with a dangerously low margin. In a country like India, subject to great risks of loss...from failure of rains or from floods, it is desirable to have some margin of revenue over expenditure from which a reserve can be built up in reasonably good years... The last consideration to which I have to call attention, is one which bears most weight in my own mind. We have got to prepare for the probability that the next stage in constitutional development will need provision of more money for the provinces and that, in some form or other, the Central Government must be prepared to relinquish part of its own sources of revenue. After all, it is in the hands of the Provincial Governments that the real nation-building services lie, and the two great needs for India are agricultural development and, as a necessary condition of its success, the increase of a really effective form of primary education. Of all the tasks, the responsibility for which my present office lays upon me, that which I take most seriously is the duty of finding

revenue in order that those provinces, which are at present handicapped by financial difficulties, may make a great start forward in developing the services which the country really needs. I believe that, in the new taxes which I have proposed, I have opened the way, if things go well, without putting any burden on the economic life of the country or subjecting to hardship any particular class, to create a margin which will enable us, as soon as the constitutional reforms are settled, to give a fair measure of assistance to the Provincial Governments in the next chapter of their history."

Sir George Schuster then turned to review the ways and means position for the year 1929-30, and after presenting the tabular statement in the usual form, proceeded: "The gross proceeds of the rupee loan in the current year amounted to about 35½ crores, of which 22¼ crores represented conversion of bonds maturing from 1930 to 1932. This substantial reduction in the amount of the loans maturing in the near future has considerably improved the position for next three years, but the actual cash received in subscription to the loan was 13¼ crores only, *i.e.*, 4¾ crores less than the total new loan provided for in the budget. As I anticipated at this time last year, it was necessary to resort to external borrowing on a considerable scale. Sterling bills for £6 millions in each case were issued in London in May and December, and the total net amount of funds raised during the year in England has thus amounted to about £12 millions." It had actually been intended to raise a sterling loan during the latter part of the summer; but "conditions were then very unfavourable owing to the position in New York and the existence of a bank rate of 6½ per cent. in London, and we thought that we should gain by waiting for cheaper money rates. When the New York boom collapsed, the anticipated easing of money commenced, but, by that time, political anxieties had begun to dominate the position in the London market for Indian securities, and the nervousness of London investors was intensified by the attitude adopted at the Congress meeting at Lahore in December. The facts, however, had to be faced, and as during the year Government had to meet the greater portion of the £5¼ millions for the purchase of the Southern Punjab Railway and about £7½ millions for other railway capital expenditure, we felt that, in spite of the unfavourable conditions, we should not be justified in financing this capital expenditure entirely by temporary borrowing in the form of India

bills... By the issue of two-year bonds with the option of extension for a third year, we have obtained accommodation for a period sufficient to allow for the passing of the present political uncertainty... The success of this operation, even though the terms were onerous, had a very good effect on our credit in London.

"The combined amount of the above borrowings corresponds roughly with the budget forecast, but owing to events which it was impossible to foresee, it was necessary to supplement our resources by large issues of treasury bills in India. In the first place, contraction of the currency to the extent of 6·86 crores against cancellation of rupee treasury bills and 2·94 crores against silver withdrawn for sale depleted our resources by nearly 10 crores. But while this...contraction of 10 crores counterbalanced part of our borrowings, other factors have contributed... to worsen our ways and means positions. As a result of the falling off in railway receipts and the increase of working expenses, there is a deterioration of nearly 3 crores under Railways. Borrowings by the Provinces are now expected to exceed the Budget by about 2¼ crores, and, in view of the heavy disbursements in April in London and in India, the closing balance will stand at a figure 9 crores higher than provided for in the budget estimate. For these reasons, the revised estimate provides for an increase from 4 crores to 24 crores in the amount of treasury bills outstanding with the public, of which I would remark again that 9 crores is represented by increased treasury balances.

"In my last budget speech, I dealt at length with the railway capital expenditure and envisaged the possibility of a drastic reduction in 1930-31 in order that the credit of the Government might not be over-strained. The purpose thus indicated has been fulfilled, and we are allowing 16¾ crores only for railway capital expenditure. Moreover the real reduction in new railway capital expenditure sanctioned is actually larger than these figures indicate, as 2·35 crores of the programme for 1930-31 really form part of the sanctioned programme for 1929-30." Thus whereas the programme for 1929-30 amounted to 26·5 crores, that for 1930-31 is 14·4 crores only.

"With this provision for railway capital expenditure, our borrowing programme for 1930-31 is, so far as new money is concerned, a very modest one. So far as sterling operations are concerned, I assume that the £6 million India Bills falling due in

December will be renewed; but, if conditions are favourable, this floating debt will be funded. As regards India, I estimate that a loan of 23½ crores will be required, of which 7·4 crores only will be new money and the remainder, namely 16·1 crores, will be utilized for redeeming outstanding loans, principally 1930 Bonds. This provides for reducing the amount of outstanding treasury bills from 24 crores at the close of the current year to 20 crores at the close of the next. I anticipate no difficulty in carrying out this programme without disturbing the market for Government securities, and, if conditions improve, it may be possible to fund a larger amount of the floating debt than I have assumed in my present calculations. On looking back on these proposals, I feel justified in saying that provided only that political disturbances do not upset either conditions in India or confidence in England, our borrowing programme is of such a nature that we could confidently look forward to a general appreciation in Government securities.

" A year ago, it was estimated that we should require to remit £35¼ millions to London in 1929-30. Throughout the year the exchange position has been difficult " owing to the boom on the Stock Exchange in New York, which caused high money rates throughout the world, followed by the slump, whereby prices were markedly depressed and trade decelerated. " In addition, the uncertain political outlook has led to the export of capital on a considerable scale. As a result, our power to effect remittances to London has been temporarily curtailed and we now estimate that the total remittance through the market in the current year will amount to £19 millions only. This will suffice, with the help of the sterling borrowings referred to above and the transfer of £9½ millions already effected through the Paper Currency Reserve, to enable the Secretary of State to close the year with a balance of £6·8 millions. Assuming that the £6 million India bills falling due in December 1930 will be renewed, the amount required to be remitted to London next year is estimated to be about £31·8 millions. This figure includes £3·3 millions for capital expenditure on railways as compared with £7·5 millions in the current year and £2·4 millions for repayment of debt.

" The fall which has taken place in the prices of rupee securities of the Government of India since last year may be ascribed

to a number of causes. Some would no doubt attribute chief importance to the magnitude of the Government's own needs. I explained this aspect of the situation very fully in my speech last year. It is clear now, in retrospect, that from 1925 to the beginning of 1928, the full effects of the capital expenditure programme launched by the Government were not felt. Such expenditure as was incurred was met very largely from reserves, while the expenditure itself had not got fully under weigh. When once expenditure got going at the full rate, and had to be met not from reserves but by fresh borrowing, it was obvious that the price of Government securities must come down from the high peak to which they had climbed. I gave a clear indication of this in my speech last year and also explained that, while I felt it necessary to curtail capital expenditure, it would not be possible to give effect to this at once without great economic loss, because so much work was already in progress and commitments such as the purchase of the Southern Punjab Railway had already been undertaken. I made it quite clear, however, that it was my intention to put on the brake as soon as possible, and, in the meanwhile, I endeavoured to settle the terms of our rupee loan last year on such a basis that it would represent a rock-bottom price from which a steady appreciation might be expected as a result of the curtailment of future borrowings. I think we may at least congratulate ourselves on the fact that, in spite of all the unfavourable developments which have since occurred, last year's rupee loan only stands about one point below the issue price. If it had not been for two unfavourable factors over which we had no control, I am certain that last year's loan would now be standing at a handsome premium. These factors have been, first, the wave of dear money which swept over the world, culminating in a 6½ per cent. bank rate in England...and, secondly,...the fears felt in London as to the future political stability of India. I have already said that I believe these fears to be entirely unjustified, but their results are unfortunately realities which we have to face. What we have to expect from the operation of this factor depends mainly upon the action of the leaders of public opinion in this country, as represented by Honourable Members of this Assembly and those outside. If there is clear evidence that such leaders are determined to oppose all revolutionary movements and to co-operate in a course of peaceful and orderly evolution, disclaiming those

threats of unconstitutional action and repudiation of debt which we have so recently heard, then I am quite certain that the outside world will regain confidence in India and that we shall advance once more to our former high level of credit. But, if a contrary course is taken, then it will be impossible to avoid unfavourable reactions on India's economic development. There must be a lack of that confidence which is so necessary to the initiation of new enterprises, and it is almost certain that a flow of capital from India will continue. Speaking on behalf of the Government, we have done all in our power to create a strong and healthy financial position, and I think what I have already said has demonstrated the effectiveness of our action in this direction. If the insidious lack of confidence continues to sap our foundations, we shall, as a Government, do our best to protect them and shall not hesitate to take strong financial measures for that purpose. But this will mean that our energies and resources will have to be devoted to defence rather than to constructive new enterprise and that the hopeful prospect of an all-round recovery, which would bring prosperity in so many directions and for which, so far as lies in our power, we have created all the necessary conditions, will be unattainable...

" Before I conclude, I must make a few short observations on the general economic situation... The effect on the general wellbeing of the country must be at the root of all our financial policy and I think that, if my proposals this year are carefully and impartially studied, it will be found that this has been throughout their main purpose and intention. It is very obvious at present that India is suffering from a general wave of depression. It is also obvious that, apart from this special depression, there is great room for improvement in the standard of living of the masses of the country and of general economic production. It is necessary to make a clear distinction between these two conditions. The first is temporary and not special to India. It is mainly produced by causes over which the Government have no control. The second is one which demands the constant and urgent attention of all the forces of society, public and private alike. As to the first,...I only wish to emphasise at present that I think that the depth of the depression is exaggerated in comparison with the very special period through which the country passed in the years 1924-25 and 1925-26. If we examine the trend of economic events in India since the end

of the War, we find that the volume of imports and exports has, on the whole, shown a steady progression with two exceptional periods, first, as regards imports in 1920-21 and, secondly, as regards exports in 1924-25 and 1925-26. As regards prices, while the prices of imports have tended steadily to decline, those of exports, for various world causes. tended to rise during the period from 1921 to 1924. Since then, world prices for Indian imports and exports have steadily declined. The point of time at which the general rise in the prices of India's exports culminated coincided with an exceptional period for the volume of agricultural production, and this produced, in the two special years 1924-25 and 1925-26 ..., an exceptional peak of prosperity. Public opinion as to the course of Indian trade and general conditions, tends, I think, at present, to be framed too much with reference to this special period, and though I do not wish to minimise the effects of the present depression, I think that, if our view is cast back along a longer period of India's history, we shall find that the present conditions are not, in comparison, so black as they are sometimes painted... The cause of the continued fall in world prices for India's chief imports and exports since 1925-26 is somewhat obscure. It would appear to be world-wide, as, on the basis of 100 for 1926, the Index numbers of general prices in the United Kingdom, the United States and India are 92·2, 96·8 and 95·3 respectively for 1929. While a fall has thus taken place in all the three areas, that for India lies between those for the United Kingdom and the United States. This world-wide fall in prices has been put down by some to general over-production, both of raw materials and industrial products, throughout the world. It is known that large scale mass production has been developing throughout the world during the last few years and that tropical and sub-tropical areas have extended their output of raw materials. There are others who would give, as a further reason for the general world-wide fall in prices, the insufficient production of gold for the general requirements of the world as a whole.

"Unfortunately, the fall did not end with 1929. Conditions in America...have led to a large recession in business activity all over the world. The immediate out-look is uncertain. Manufacturers and dealers are using up their stock of raw materials and refusing to enter into fresh commitments until they see how far this recession is likely to go...India has been particularly hard hit

by this world development. Since the 1st of January the price of cotton has fallen by about 15 per cent and the price of wheat by about 12 per cent. while the prices of other staple products such as jute and rice show no signs of recovery from the low level which they reached during the year 1929...Whatever the reasons for the fall and whatever the future prospects, it is clear that the conditions of the agricultural classes of India must be seriously affected, and it may be that, in order to maintain their position, they have to part with an undue proportion of their own production. Measures of immediate relief are difficult, but the main lines of the policy which should be pursued seem clear. In the first place, and above everything, it is necessary to stimulate and improve the agricultural production of the country, and, as a supplement to this, to put the poorer agricultural classes into a position in which they can retain a greater proportion of their own produce for their own subsistence. In the second place, it is desirable to encourage industrial development provided that this can be done in conjunction with, and as a supplement to, the agricultural life of the country. In the third place, and this is a minor matter but still one of very great importance, the whole country urgently needs the provision of better methods for the study of its own economic conditions than are at present available.

"I venture to say that, if the significance of all the proposals to which I have referred in this speech is examined, it will be found that steps are being taken in all these directions."

By means of this condensation of Sir George Schuster's speech we have now presented the reader with as clear and comprehensive a picture as is possible of the financial events of the year. But before we bring this Chapter to a conclusion there is one other matter that requires discussion. This is the Railway Budget, which was presented to the Legislative Assembly by the Commerce Member, the Hon'ble Sir George Rainy, K.C.S.I., K.C.I.E., on the 17th of February 1930. For the assistance of those readers who are unacquainted with previous editions of this Report two preliminary facts must be explained; the first,—to which we have already drawn attention in Chapter V,—is that by far the greater part of the railway system in this country is managed by the State. and the second, that although for many years the railway finances formed part of the general finances of India, this is now no longer the case, and accordingly two budget statements have to be pre-

sented annually in the Assembly. The separation of railway finances from the rest was effected in 1924, as a result of the recommendations put forward in the report of the Acworth Committee, in which strong emphasis was laid on the disadvantages of a system whereby the development of the railways was subjected to substantial and incalculable fluctuations from year to year, in accordance with the changes in the Central Government's financial position and the general conditions of trade which happened to prevail throughout the country. In such circumstances continuity of policy was proving impossible, and waste and confusion ensued. As a result, a scheme was devised which enabled the railways to be financed simply as a business undertaking, and which, incidentally, relieved the Government of many awkward problems. The arrangement entailed the contribution to the Government of a definite annual sum by the railways, which was to be the first charge on their net receipts. The balance, after payment of this contribution, was to be placed to railway reserves on the condition that if, in any one year, the amount available for transfer to reserve should exceed Rs. 3 crores, one-third of the excess should be paid to the general revenues. The railway reserve was to be used to secure the payment of the annual contribution to general revenues, to provide, if necessary, for arrears of depreciation and for writing down and writing off capital, and to strengthen the financial position of the railways in order that the services rendered to the public might be improved and rates reduced. The effect of this arrangement in general has been that the State, and thereby the Indian tax-payer, is now practically assured by the railways of a regular annual return bearing a reasonable relation to the amount of public money expended upon them; while the task of maintaining a continuous financial policy and of distinguishing between a temporary and permanent surplus or deficit in accounts is immensely facilitated.

In introducing his budget Sir George Rainy said:—"When I presented the current year's budget to the House, we expected that the surplus for the year 1928-29 on all lines would be nearly Rs. 9 crores. Both receipts and expenditure fell short of the estimate, but the shortage on the receipt side was the more serious, and the year closed with a net gain from the Railways of less than Rs. 8 crores. The result was that we were able to add Rs. 2¼ crores to the reserve after paying the fixed contribution.

"The falling off in traffic receipts in February and March 1929, was unfortunately symptomatic of what was to come, and the financial results of the current year can only be described as disappointing. We budgeted for a total revenue of about 1,06½ crores and a total expenditure of 95¼ crores, and had this result been achieved. we should have closed the year with a surplus of Rs. 11¼ crores on the commercial lines. We now expect that the actuals will be more than Rs. 4 crores worse than the estimate, so that the final surplus is likely to be little more than Rs. 7 crores. There has been a serious decline in the loadings of grain and pulses; oilseeds did well in the first half of the year and badly in the second, and with two exceptions all classes of traffic have been lower than in the previous year. The two exceptions are cotton and coal. The increase in the cotton traffic appears to be due not to a larger crop, but to the fact that it has moved unusually early, and we must expect a decline in the coming months. The increased traffic in coal, on the other hand, is, I am glad to say, the visible sign of improved conditions in the coal industry and the lifting of the depression which has so long overshadowed it...

"I do not propose to analyse in detail the causes to which the reduction in earnings should be ascribed. The heavy falling off in grain traffic is clearly due to the unsatisfactory harvests of recent years in Northern India, but under other heads it is not so much that traffic has fallen off heavily as that it has failed to expand to the extent we hoped. India, like other countries, is passing through a period of trade depression due to falling prices, when buyers naturally adopt a cautious policy and goods move slowly. Conditions such as these must inevitably be reflected in the railway traffic returns, and the falling off in traffic might easily have been worse than it is. It must not be forgotten that the reductions in rates and fares made in the last five years were estimated to involve a loss of revenue exceeding Rs. 5 crores in a full year, a loss which we hoped to make good from the expansion of traffic. For the present our hopes have not been realized, for when traffic is inelastic, reductions in rates and fares must inevitably bring down receipts. But there is no ground for despondency, and I do not doubt that when trade conditions improve, our expectations will prove to have been well founded. Our reduced rates for long distance coal announced last year

have certainly acted as a stimulus to the coal trade and the lower fares for third class passengers have been accompanied by a growth in traffic. The passenger mile figure has gone up by 5½ per cent., and the passenger earnings this year are likely to exceed those of the previous year by about two-thirds of a crore.

"On the expenditure side, we budgeted for total working expenses of Rs. 64½ crores, but actually they are likely to be 2¼ crores of rupees higher... As the mileage of the Indian Railways increases,—and we expect to open 600 miles of line this year,—expenses inevitably go up, for the new lines have to be staffed and more train miles are run. Again, we have begun to spend money on the improvement of service conditions of our lower paid staff... Flood damages have been unusually severe and have helped to swell our repairs and maintenance bill. The stocks of coal on the railways had fallen to a low level in March last, and the raising of them to an adequate figure has increased the expenditure on fuel. Finally, the taking over of the Southern Punjab line from the 1st of January means an apparent increase in working expenses of about a quarter of a crore. I say an apparent increase, for the expenditure on that line was formerly recovered from the Company and the recoveries shown as a 'deduct' entry under working expenses, while from now onwards there will be no recoveries and both receipts and expenses will be increased proportionately.

"I have mentioned the principal factors which have tended to raise our working expenses, but during the last two years the growth of expenditure has been rapid, and I recognize the obligation resting on those who administer the railways to take all possible measures to keep down expenses and enforce economy in every branch of the administration... I am far from advocating that false species of economy which postpones necessary expenditure only to be faced by higher costs at a later date. But in present circumstances I feel that working expenses must be watched with a specially vigilant eye, and the railway Board some months ago drew the attention of Agents to the matter and impressed on them the importance of keeping the financial aspect constantly in mind..."

Sir George Rainy then discussed the question of expenditure other than working expenses. "... As compared with 1928-29, interest and depreciation charges are up by Rs. 1,09 lakhs and Rs. 58 lakhs respectively, and the expenditure under surplus

profits paid to Indian States and Railway Companies has been swollen by an unexpected throw forward into the current year of the surplus profits payable to the Burma Railways Company for the last nine months of 1928. On the basis of the revised estimates, we expect that at the close of the current year the figures will stand as follows. The total receipts from commercial lines we put at nearly Rs. 1,05 crores, which is Rs. 1¼ crores above the receipts for last year. The expenditure is estimated to be nearly Rs. 98 crores—an increase of Rs. 3¾ crores. The net gain from the commercial lines will then be Rs. 7 crores, out of which the loss on the strategic railways amounting to Rs. 1,81 lakhs has to be met. The balance of Rs. 5,26 lakhs is insufficient to meet the contribution of Rs. 6,12 lakhs to General Revenues, and we shall have to draw on our reserves to the extent of Rs. 86 lakhs.

"The budget figures for the coming year do not disclose any startling differences from the revised estimates. Our total receipts will, we estimate, amount to nearly Rs. 1,08 crores, a figure which is nearly Rs. 3 crores more than the revised estimates for the current year. The total expenditure we put at nearly Rs. 1,00 crores, an increase of slightly over Rs. 2 crores on the revised estimates. The final result is a net gain to the Railways of nearly Rs. 8 crores, which is about three-quarters of a crore better than the revised estimates of the current year. Out of the surplus, we shall have to meet the net loss on the strategic railways amounting to Rs. 1,80 lakhs and the contribution to general revenues amounting to Rs. 5,74 lakhs. Only a small balance of Rs. 34 lakhs will then remain to be added to the Reserve Fund.

"One important change, which affects the figures both of receipts and expenditure, deserves special mention, I mean the purchase of the Southern Punjab Railway. Had we not taken advantage of the opportunity to purchase this year, our receipts in 1930-31 would be lower by about Rs. 1,44 lakhs and our working expenses by about Rs. 88 lakhs. It will be seen, therefore, that our net receipts will be 56 lakhs higher owing to the completion of the purchase; and, since our charges for interest on the purchase price are only 37 lakhs, we make a clear profit of 19 lakhs from the transaction. I have thought it worth while to mention the matter in order to make it clear that though the

purchase of the line in the current year has meant a heavy drain on our capital resources, it is in itself a most profitable transaction resulting in a substantial increase in our railway revenues.

"If we eliminate the increase in our traffic receipts ascribable to the purchase of the Southern Punjab Railway (making due allowance for the fact that the purchase affected also the last three months of 1929-30), it will be found that we are budgeting for an increase in gross traffic receipts of only about 2 crores. This, I think, is a reasonable estimate, for while we may fairly hope for a normal year, we are unfortunately not justified at present in anticipating any marked improvement in trade conditions. On the expenditure side, we anticipate an increase of Rs. 1 crore in the charge for interest and two-thirds of a crore under depreciation. Both these charges of course follow automatically from the increase in the capital at charge. For the rest, we expect an increase of three-quarters of a crore under working expenses (excluding depreciation). But here I must remind the House that not only revenue, but expenditure also is increased by the purchase of the Southern Punjab Railway, and if that factor is eliminated, the increase is only a quarter of a crore... In general, while we expect fairly substantial increases under Administration and Operation, we believe that these will to some extent be counterbalanced by a reduction under Repairs and Maintenance.

"I turn now to the Capital Programme. We expected to spend during the current year Rs. 26½ crores on works the cost of which is debitable to capital, and we now estimate that the actual expenditure will be a little more than Rs. 24 crores. Next year the capital expenditure is placed at Rs. 16¾ crores. These figures show clearly how greatly the position has changed since 1927, when it still seemed possible that funds would be forthcoming to meet all reasonable requirements for railway development. It has now become evident that the most drastic reduction in the capital programme is inevitable, and that in present circumstances there is nothing for it but to cut our coat according to our cloth...

"When the scale of development expenditure is for any reason subjected to sudden and drastic curtailment, the danger always is that works in progress may have to be abandoned or postponed for an indefinite period when they are half way to completion, and if that happens, the inevitable consequence is that the money

already spent is largely wasted because it cannot come to fruition until long after the due date. I am glad to be able to say that this result will not occur on the Indian railways to-day. In order to bring about the necessary reduction in capital expenditure, it has not been necessary to bring to a standstill important works in progress, and it has sufficed to refrain from the commencement of new projects which would have involved the railways in heavy commitments for future years...

"Compulsory abstention from the initiation of new projects provides an opportunity for taking stock of the railway construction programme as a whole and for laying down the broad lines of policy which for the next three or four years we ought to try to follow. It is intended to take full advantage of this opportunity and to consider deliberately the best use which can be made of such funds as are likely to be available during that period. It is in connection with the Capital programme that the operations of the Railway Department chiefly affect the general finances of the Government of India, and in any review of policy the Finance Department must take its full share. The Government of India have decided that, in order that the position may be kept under control and that the best use may be made of all sums available for capital expenditure, the general questions of railway policy in their financial aspect should be brought under review at half-yearly intervals by the Finance and Railway Members of the Government in consultation,—once at the beginning of the Simla season and once at the time of the Agents' Conference in the autumn. I believe that very real advantages will result from this new arrangement...

"In a year like the present when we are rigidly restricting our capital expenditure, it is natural that there should not be much to say as regards particular projects. Of the works now in progress I need only mention the electrification of the Ghat sections of the Great Indian Peninsula Railway and of the suburban railways at Madras, the new Perambur workshops of the Madras and Southern Mahratta Railway, and the further prosecution of the Raipur Vizianagram Railway, which will ultimately provide the Central Provinces with a new outlet to the sea at proposed to initiate is the doubling of the East Indian Railway Vizagapatam. The only new work of any magnitude which it is line between Cawnpore and Tundla, which has become a matter

of some urgency. A sum of Rs. 20 lakhs has been provided in the next year's Budget for doubling the most congested section between Shikohabad and Tundla. Of the works which we should like to have commenced but are unable to do so I might perhaps mention the Dacca-Aricha Railway in Eastern Bengal and the branch lines intended to serve the cotton growing tracts north and south of Akola in Berar."

Sir George Rainy concluded his speech by describing the very satisfactory results which had been achieved as a result of the appointment,—which was described in our Report last year,—of an additional member of the Railway Board who is specially charged with responsibilities for all matters connected with the welfare of the railway staff.

Apart from the variety of questions dealt with in the General and Railway Budget statements, there are, this year, no further important events in connection with the country's financial affairs to discuss, since reference has already been made in Chapter III to the Indian Finance Bill, 1930, the Cotton Textile Industry (Protection) Bill, 1930, and the Silver (Excise Duty) Bill, 1930, while in Chapter I, in addition to providing the reader with a brief preliminary sketch of the outstanding financial events of the twelve months ending with March 1930, we gave some space to a description of the origin and progress of the Banking Enquiry, whose establishment was referred to in the previous edition of this Report.

CHAPTER VIII.

Health and Education.

At the outset, the title and scope of this Chapter require some explanation, since both Public Health and Education are primarily the concern of the provincial Governments, and as such will be discussed in Chapter X. The Central Government, however, still exercises certain residuary functions in connection with these subjects, which are sufficiently important to need separate description; these consist, in medicine, chiefly in the assistance and guidance of research, the power to take action in respect of infectious and contagious diseases, and participation in international medical activities,—while in education they include responsibility for public instruction in areas such as the North-West Frontier Province which are administered directly, and for control over Chiefs' Colleges, the University of Delhi, and the denominational Universities of Benares and Aligarh. In this Chapter, therefore, we will be dealing solely with these particular subjects, —that is to say with such aspects of public health and education as from their nature are matters of "All-India" concern, or with those over which the Government of India has had to maintain or assume control owing to the financial, administrative, or territorial restrictions of the provincial Governments; and consideration of other features of the country's educational or public health services will be deferred until later.

Obviously there are few activities of the State more important, particularly in tropical lands, than the maintenance and improvement of public health, and some indication has already been given, in Chapter IV, of the magnitude and gravity of the problems with which the medical authorities are confronted in India. The physical and mental suffering that results from the prevalence throughout the country of so many serious diseases,—much of which, were it not for the apathy and unhygienic habits of the masses, would undoubtedly be preventible,—is of course appalling, and the economic consequences are perhaps equally so. These manifest themselves not only in such obvious ways as low productivity, rapid labour turnover, and loss of working days, but

also,—owing to the inter-action between the high rate of mortality and the legal and religious customs of the country,—in uneconomic sub-division of land and in lavish expenditure on funeral ceremonies on the part of those quite unfitted to bear it.

Probably the most valuable of the various activities undertaken by the Government of India to combat this state of affairs has been the assistance it has given to medical research. The Indian Research Fund Association, which was established in 1911, can claim to have been one of the first institutions for conducting medical research on a large scale in the world, and its organization has been copied by several other nations. In recent years, as has been indicated in previous editions of this Report, the Government of India has been able to increase the scope of the Association's activities considerably, and during the period under review its investigations into the various tropical diseases affecting India continued to yield valuable results.

As in the previous year, a grant of Rs. 7,50,000 was made to the Association during 1929-30, which consisted of Rs. 5,00,000 on account of the restoration in full of the original grant given to it before 1923-24, and Rs. 2,50,000 to enable it to meet the pay and pension, leave and passage contributions of officers of the Medical Research Department. A provision of Rs. 35,400 was also included in the budget estimates of the Director-General of the Indian Medical Service for 1929-30 to meet the cost of training 3 officers for medical research. During the year under review the Association financed 48 enquiries into various aspects of medical research at an estimated cost of Rs. 10,50,824. These included investigations of malaria, plague, cholera, anti-rabic vaccines, kala-azar, leprosy, helminthological and nutritional diseases, tuberculosis, bacteriophage and its uses for dysentery and cholera, maternal mortality, morbidity in child-birth, anæmia of pregnancy, hæmoglobin-determination in health and in anæmias, the causation of fœtal and maternal dystocia, sprue, indigenous drugs, drug addiction, skin diseases, diabetes, the blood changes occurring in certain tropical diseases, spirochætosis transmission, the histology of the spleen and the bone marrow, filariasis, guinea-worm disease, relapsing fever, osteomalacia, the secretion and composition of gastric juices, anthropological methods of determining age for medico-legal purposes, and several minor inquiries into other diseases. The malarial inquiries were conducted chiefly

by the Malaria Survey of India, which is a Central organisation, located at Kasauli; plague was investigated at the Haffkine Institute at Bombay, kala-azar by a commission in Assam, bacteriophage by Dr. Asheshov at Patna, nutritional research by Col. McCarrison at the Pasteur Institute, Coonoor, and indigenous drugs and drug addiction by Lt.-Col. Chopra at Calcutta. During the year the Association continued, as usual, its contributions towards the cost of two professorships at the Calcutta School of Tropical Medicine and Hygiene, to the pay of the Leprosy Worker employed at the same school, and to the upkeep of the Imperial Bureau of Entomology in London.

The Conference of Medical Research Workers held its seventh annual meeting in Calcutta in December 1929. The members of the Conference, who are drawn from all parts of the country, meet to discuss the general policy of research-work in India as well as the particular new schemes which it is proposed should be undertaken by the Indian Research Fund Association, and the opinions expressed at the Conference are taken into consideration by the members of the Scientific Advisory Board of the Association when its recommendations for the programme of the following year are being framed. The meeting of the Advisory Board was held this year immediately after the conclusion of the Conference, and the programme of research for 1930-31, which the Conference had been considering, was examined, and proposals were put forward for acceptance by the Governing Body of the Association.

In last year's Report mention was made of two schemes for fostering medical research and higher education in public health in India, one being the establishment of a Public Health Institute at Calcutta, and the other the establishment of a Central Medical Research Institute at Dehra Dun. Both these projects had gained the general approval of the Standing Finance Committee and the Secretary of State. During the year under review, the Executive Committee of the Rockefeller Foundation of New York placed at the credit of the Indian Research Fund Association a sum of $372,000 as the first instalment of their grant towards the site, building and equipment of the Public Health Institute at Calcutta. This grant, which will ultimately amount to $648,000, was made on the condition that the Government of India placed the Institute under the control of the Indian Research Fund Asso-

ciation and guaranteed to provide adequate financial support for its maintenance by an annual recurring grant of about Rs. 3 lakhs. These conditions were accepted, and the Association has been making arrangements to acquire the site and erect the building. A construction sub-committee has been constituted and Lt.-Col. A. D. Stewart, I.M.S., and Major A. A. E. Baptist, I.M.S., (retired) have been selected as Director-designate and Assistant to the Director-designate, respectively, for a period of two years, and will have charge of the work of constructing, organizing and equipping the Institute. The project for establishing a Central Medical Research Institute at Dehra Dun, however, could not be proceeded with during the year under review. The scheme as submitted to the Secretary of State and placed before the Standing Finance Committee in August 1928 provided for the retention at Kasauli of the section of the Central Research Institute which deals with the manufacture of sera and vaccines. At the time when this arrangement was proposed both Major-General J. D. Graham, C.I.E., I.M.S., the Public Health Commissioner with the Government of India, and Bt.-Col. S. R. Christophers, C.I.E., I.M.S., the Director of the Central Research Institute at Kasauli, were absent from India on leave and could not be consulted; but they have since expressed the opinion that there is reason to reconsider the question of transferring the manufacturing activities of the existing Institute at Kasauli to the Central Medical Research Institute. Another difficulty which arose was the necessity for providing residential accommodation for the staff at Dehra Dun. It had been assumed when the scheme was originally drawn up that little or no expenditure would have to be incurred on this account, as the staff could be accommodated either in existing buildings or in the town, but further detailed examination showed that this was not so, and that an expenditure of about Rs. 8 lakhs would in all probability have to be incurred on providing residences if the Institute was to be established at Dehra Dun. The selection of Dehra Dun as the site for the Institute had also to be reconsidered for yet another reason. Strong representations were received from various non-official medical associations in India to the effect that as Dehra Dun is not a University centre it lacks the essential conditions for the successful prosecution of medical research—that is to say, intellectual atmosphere and clinical material. A resolution on the subject

was moved in the Legislative Assembly by Mr. M. R. Jayakar on the 8th of February 1930, and the Government of India has now undertaken to convene a conference of officials and non-officials to reconsider the whole scheme and make recommendations concerning the most suitable site for the Institute.

Before passing on from the question of the facilities for medical research work at Dehra Dun, there is one other point which deserves mention. In 1905, an X-ray Institute was established there as a centre for instructing medical officers and subordinates in the management of X-ray apparatus and as a *depôt* for the storage and repair of material used in connection with it. In addition to these functions the Institute carried out radiographic examinations, maintained a clinic for the treatment of a limited number of out-patients, and gave expert technical advice to the military and local authorities who chose to consult it in matters relating to the purchase and repair of X-ray apparatus. But as a result of the Montagu-Chelmsford Reforms, the Government of India ceased to be responsible for maintaining, at its own expense, an Institute devoted to the treatment of persons coming from areas under the control of the provincial Governments. Moreover, the maintenance of the Institute, which cannot be made self-supporting, was no longer considered necessary in the interests of the Army, as it has been found possible by the military authorities to make other and more economical arrangements. The Government of India therefore felt it necessary to arrange for the abolition of the Institute, which was effected on the 1st of April, 1930, and steps are being taken to dispose of X-ray stores stocked there.

The question what agency should be employed for co-ordinating the research activities of the proposed All-India Institute of Public Health at Calcutta, the Central Medical Research Institute, and the Indian Research Fund Association, has been under consideration by the Government, and in December 1929, it was decided that the Governing Body of the Indian Research Fund Association should be entrusted with this function. This decision necessitated the appointment of the Director of the Public Health Institute and the Director-in-Chief of the proposed Central Medical Research Institute as additional members of the Governing Body of the Association; but apart from this, the Government was of the opinion that the time had come when the Governing Body

should in any case be enlarged by the inclusion of representatives of the Indian Legislature and of the Indian Universities, together with a non-medical scientist. Accordingly, two non-official members of the Legislative Assembly, one non-official member of the Council of State, two representatives of the Medical Faculties of the Universities, and one eminent non-medical scientist have been appointed as additional members.

During the year the Rajah of Parlakimedi gave Rs. 1 lakh for the purpose of establishing two scholarships for training in nutritional work under the Director of Nutritional Research, Coonoor, and this money, constituted as the " Parlakimedi Trust ", will be administered by the Indian Research Fund Association with the help of a Committee. The Rajah of Parlakimedi was elected a life member of the Governing Body of the Association.

Hitherto, recruitment of officers of the Indian Medical Service to the Medical Research Department has been made on the advice of the Director-General of the Service, while that of other officers has been made through the agency of the Public Services Commission. The Committee presided over by Sir Walter Fletcher recommended that, if these highly specialized and technical appointments were to be made in the most satisfactory way, a new Recruitment Board should be set up in India with the support of a small Committee in England, whose functions should be to assist in a consultative capacity upon matters which might be specifically referred to it. The recommendation of the Fletcher Committee has been accepted, with the approval of the Secretary of State; and arrangements for the composition of the Recruitment Board and the Consultative Committee are now far advanced.

The main features of the re-organization of the Indian Medical Service which was affected in 1928, and has been discussed in the two previous issues of this Report, is that the suggested unification of the military Medical Services in India should be abandoned, that an Indian Medical Service constituted approximately on the same lines as at present should be retained, primarily in order to meet the needs of the Indian Army; and that to maintain the necessary war reserve of military medical officers, and to provide European medical attendance for European officers of the superior Civil Services and their families, provincial Governments should be required to employ a certain number of officers of the Indian Medical Service. The result of the change

is that fewer posts will now be reserved for officers of the Indian Medical Service than before, and that the provincial Governments will therefore gradually be able to increase the number of posts in their own medical services. During the year under review, as a result of consultation with the provincial Governments, a new procedure was adopted, with the concurrence of the Secretary of State, for filling appointments of Surgeons-General and Inspectors-General of Civil Hospitals, so long as these appointments continue to be filled exclusively by officers of the Indian Medical Service who were in civil employ at the time when the Indian Medical Service was re-organised. Under this procedure a preliminary selection of officers will be made by a Selection Board consisting of the Director-General of the Indian Medical Service as president, and one or two Chief Administrative Medical Officers of Provinces as members. Endeavours will also be made to effect the selection at least six months before the vacancy falls due, so that the officer chosen may be able to proceed to the United Kingdom on leave and thus have an opportunity of acquiring up-to-date information. The actual appointments will continue to be made by the Governor-General in Council from the names recommended by the Selection Board in consultation with local Governments concerned. This arrangement will remain in force only until the claims of officers of the Indian Medical Service in civil employ on the 10th of May 1928, have been liquidated.

When the re-organization of the civil medical services was announced, it was stated that the application of the new scheme of reservation of posts for the Indian Medical Service would leave, on the civil side, a surplus of officers of the Indian Medical Service holding appointments reserved under regulations framed by the Secretary of State in 1923, but not reserved under the new scheme. An undertaking was then given that the existing rights of such officers would be fully preserved, that prospects equivalent to those afforded by the 1923 list of reserved posts would be retained for them, and that those prospects would be allowed to diminish only *pari passu* with the absorption of the surplus officers which would continue until the number of officers in civil employ was equal to the number of posts reserved for them in the new list. Detailed proposals to give effect to this undertaking have been prepared and submitted for the approval of the Secretary of State.

In last year's Report mention was made of the project for appointing a Commissioner of Medical Qualifications and Standards, pending the establishment of an All-India Medical Council, on the lines of the General Medical Council in Great Britain, to regulate medical education in India and maintain a register of medical graduates. During the year under review some unusually important developments occurred in connection with the recognition and status of Indian medical degrees, the whole question having been raised in an acute form as a result of a resolution passed by the General Medical Council of Great Britain in February 1930; and as the passage of this resolution has had some very regrettable consequences in this country, it is necessary to describe the position in some detail.

It was in 1892 that Indian medical degrees were originally recognized by the General Medical Council for purposes of registration in Great Britain. Since 1922, however, the recognition has been accorded only for limited periods at a time, and has been extended from year to year as a result of the reports of *ad hoc* inspectors appointed on behalf of the General Medical Council to investigate the medical examinations and report on their standards. Sir Norman Walker, who had inspected the medical examinations in India in 1922, undertook, as a visitor on behalf of the General Medical Council, a further enquiry into the course of medical study and examinations of the Indian Universities early in 1927, at the invitation of the Secretary of State for India. In his report he pointed out that some more satisfactory basis than periodic visitation and inspection through the direct agency of the Council must be found, and stated that he looked forward ultimately to the establishment in India of " some central authority comparable to the General Medical Council,"—pending whose creation he suggested that a post for a Commissioner of Medical Qualifications and Standards should be created. The Government of India thereupon consulted the provincial Governments concerning both these proposals. As regards legislation for the creation of an All-India Medical Council, a draft Bill was forwarded in May 1928 to the provincial Governments, which were asked to criticise its provisions freely and to give similar opportunity to representative bodies and individuals interested in the measure and competent to express an opinion. The replies received by the Government of India, however, indicated considerable diver-

gence of views, and it was therefore decided that the best method of reaching an agreement would be to convene a conference at which the draft Bill could be discussed in all its bearings. A conference was accordingly held at Simla on the 12th of July, 1929, and was attended by the representatives of the Governments of Madras, Bombay, Bengal, the United Provinces, the Punjab, Bihar and Orissa, and the Central Provinces. The principle of the proposal to establish by statute an All-India Medical Council was first discussed, but it was evident that it did not find favour with the majority of the Ministers of the Provinces who were present at the conference. The Government of India therefore decided to re-examine the whole question in the light of the views expressed at this conference by provincial representatives. In the meantime, with the concurrence of local Governments, it was agreed that a whole-time Commissioner of Medical Qualifications and Standards should be appointed for a period of one year in the first instance. This proposal, however, had to be abandoned owing to the strong opposition which it aroused both in the Legislative Assembly and elsewhere, and the Government of India then had to consider what alternative arrangements could be made with a view to securing the continued recognition of Indian Medical degrees by the General Medical Council. The Universities' Conference which met in Delhi had recommended that, pending the creation of an All-India Medical Council, a Board consisting of representatives of the Government of India, and of Medical Faculties of Universities, should be appointed immediately as a temporary means for determining and supervising medical qualifications and standards at Indian Universities. This suggestion appeared to the Government of India to be sound, and the General Medical Council was informed that the Government would be prepared to set up a Board consisting of one representative from each Medical Faculty of the Universities in India, under the Presidentship of the Director-General of the Indian Medical Service, which would be required to appoint three Inspectors highly qualified in medicine, surgery and midwifery respectively. The reports of these Inspectors would be submitted to the Board, which would then decide whether a guarantee should be given to the General Medical Council that the possession of medical degrees of a particular Indian University ensured the possession of the minimum qualifications accepted for registration in Great Britain. It

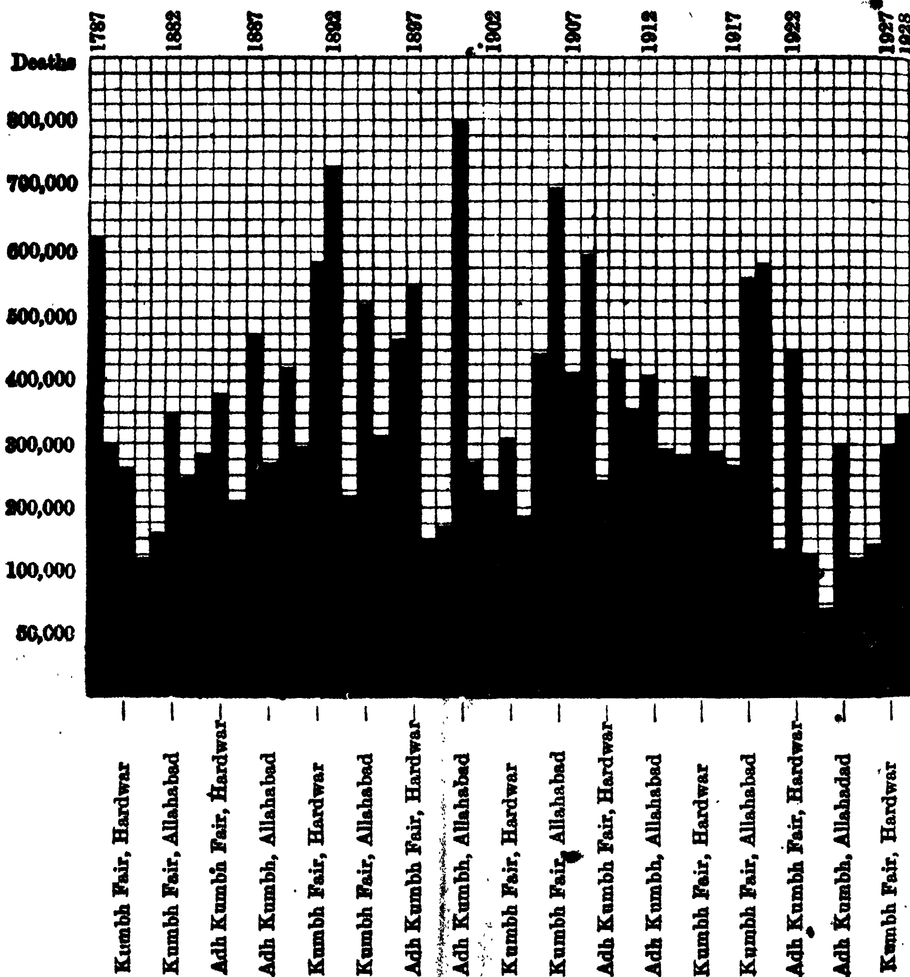
was also proposed that as the Board could not be brought into existence in time for the medical examinations at Patna and Rangoon Universities which were to be held in March 1930, *ad hoc* Inspectors should be appointed, as in the past, to inspect and report on these examinations. The proposals of the Government of India were considered by the Executive Committee of the General Medical Council at a meeting held on the 24th of February 1930, at which the following resolutions were adopted:—

"(*a*) That in the absence of authoritative information respecting the medical qualifications and standards of the Indian Universities of Bombay, Calcutta, Lucknow, Madras and the Punjab, the Executive Committee of the Council, in fulfilment of its duty under the Medical Act, 1886, Section 13, is unable for the time being to recognize the medical degrees of these Universities as 'furnishing a sufficient guarantee of the possession of the requisite knowledge and skill for the efficient practice of medicine, surgery and midwifery' in this country, and that accordingly the conditional recognition hitherto granted to these degrees has now lapsed..

"(*b*) That the proposal of the Government of India to appoint a temporary Board, contained in the letter from the India Office of January 11, 1930, has been carefully considered by the Executive Committee, but it is unable to accept the proposals as furnishing a satisfactory method of supplying the Council with authoritative information on medical qualifications and standards in India, and with the necessary guarantees of sufficiency.

"(*c*) That the Executive Committee has carefully considered the proposals of the Government of India to appoint temporary Inspectors of the qualifying Examinations of the Universities of Rangoon and Patna; but it finds it undesirable, for the reasons given in the President's letters of June 12, 1929, and December 8, 1929, to renew the practice of approving the appointment of separate *ad hoc* Inspectors which it has already found inadequate for the purpose of ascertaining the sufficiency of the standards for Indian medi-

CHOLERA IN BRITISH INDIA
(1877—1928)



cal degrees actually required and enforced by the Universities."

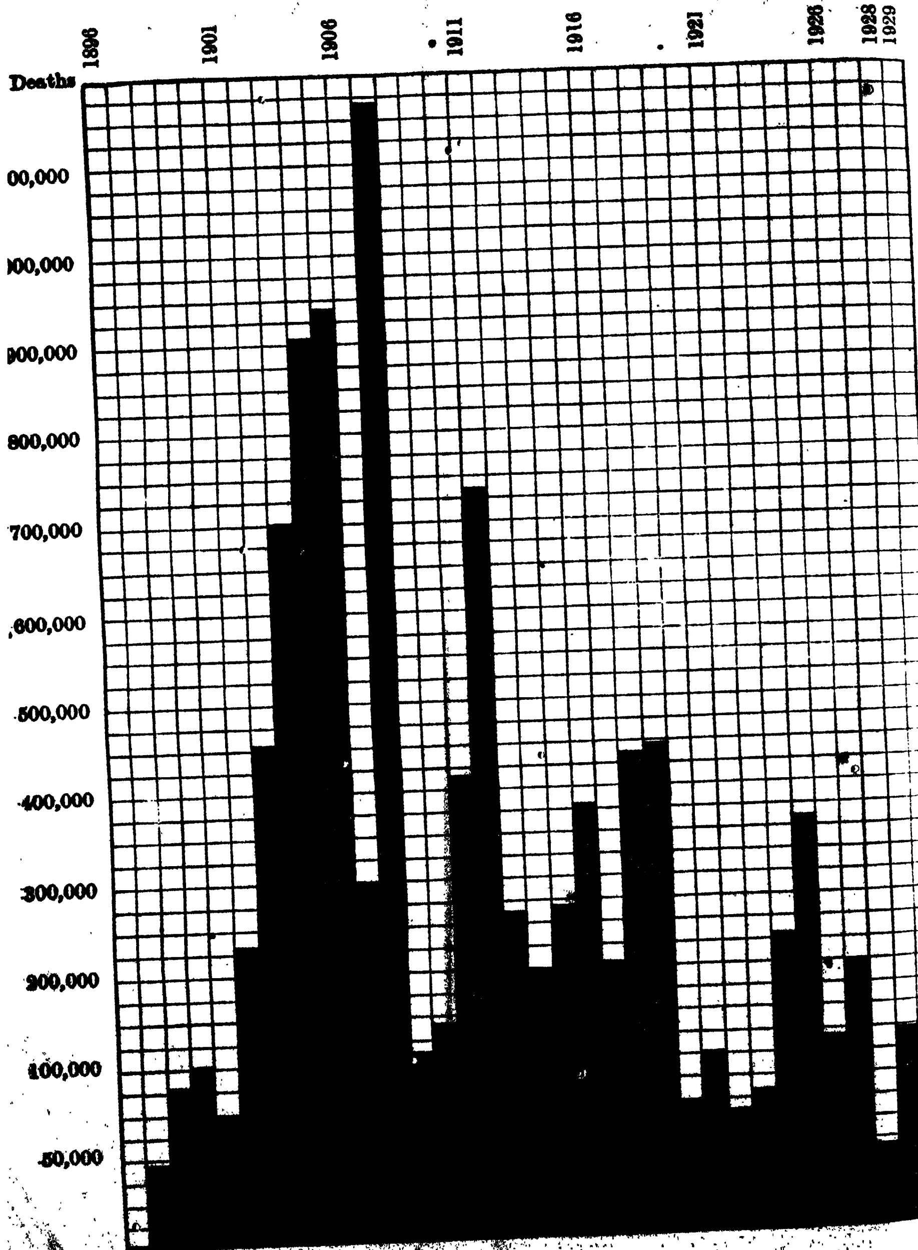
This action on the part of the General Medical Council of Great Britain had already evoked vehement and widespread protests throughout this country by the end of the period under review, and the Government of India has been earnestly engaged in endeavouring to discover some fresh means of dealing with the serious situation which has arisen.

During the period covered by the previous issue of this Report, favourable replies were received from the provincial Governments to a proposal which had been referred to them by the Government of India concerning the need for appointing a small *ad hoc* committee, whose functions should be to ascertain how far drugs recognized by the British Pharmacopœia, but of impure quality or defective strength, are imported, manufactured and sold in British India, and to indicate what measures of control might, in the public interest, be desirable. A provision of Rs. 1,10,000 on account of the committee was accordingly included in the budget estimates for 1930-31 with the approval of the Standing Finance Committee. The investigations of the committee will relate primarily to medicines and drugs of the allopathic system of medicine, but it will be asked to report whether its recommendations can be extended to medicines made from indigenous drugs. The committee's terms of reference will also include an enquiry into the necessity for legislation restricting the exercise of the profession of chemist to duly qualified persons. It is expected that the committee will commence its investigations in the autumn of 1930.

Of the various epidemic diseases that devastate India, cholera, plague, small-pox and kala-azar are among the worst. Perhaps the most striking fact about the incidence of cholera is illustrated by the diagram opposite. Every twelve years, large religious fairs or *Melas,* known as *Kumbh Melas,* are held at the great pilgrim centres,—Allahabad and Hardwar,—and the *Adh Kumbh,* or smaller *Melas,* take place six years after each large *Mela;* and figures collected over a large number of years unquestionably demonstrate a connection between these unusual congregations of people and the incidence of cholera in India generally. Naturally, therefore, the occurrence of a *Kumbh Mela* at Allahabad in January 1930, caused no small anxiety to the public health authorities. Certain suggestions made by Sir Leonard Rodgers

through the India Office for the prevention of an outbreak of cholera as a result of the *Kumbh Mela* in 1930 had been carefully considered by the Government of India, and although it was decided that compulsory anti-cholera inoculation of intending pilgrims, or pilgrims on their way to or from the Fair, was in existing circumstances impracticable and inexpedient, the urgency of the need for securing the voluntary inoculation of as many pilgrims as possible was brought to the notice of local Governments, and the Public Health Commissioner of the Government of India was instructed to keep himself in touch with the Provinces specially concerned with a view to ensuring effective co-ordination of effort. All the provincial Governments fully recognized the desirability of popularizing mass inoculation on a voluntary basis on an extensive scale, and the Public Health authorities of the Provinces mainly concerned, namely, Bengal, Bihar and Orissa, the United Provinces, and the Punjab, worked in close co-operation with each other and with the managements of the railways to induce pilgrims to submit to inoculation before proceeding to the *Mela*. Extensive facilities for mass inoculation were provided free of cost, and the Governments of Bengal, the United Provinces, the Punjab, and the Central Provinces also made arrangements to carry out voluntary inoculations of pilgrims at important railway junctions. A staff of medical officers was appointed by the Bihar and Orissa Government to inspect pilgrims passing through the Province by train on their way to or from the *Mela;* the Punjab Government made special arrangements for the inspection of returning pilgrims at important detraining centres and for isolating and treating persons found to be suffering from cholera; and in the United Provinces, medical officers were posted at the roads leading to the *Mela* to inspect in-coming pilgrims and isolate infectious cases, and a system of medical inspection of out-going pilgrims was introduced, medical officers being attached to trains for the examination of passengers and the segregation of those found to have developed cholera *en route*. In addition, the sanitary arrangements at the *Kumbh Mela* were organized with special care under the immediate control of an Assistant Director of Public Health in the United Provinces; piped and chlorinated water was supplied from taps throughout the camp area, infectious disease hospitals were organised, and daily inspections were made in the whole camp. But despite the precautions taken, the response

PLAGUE IN BRITISH INDIA
(1896—1929)



to the propaganda in favour of inoculation was not satisfactory; the number of inoculations performed within the area of the *Mela* itself was only 3,698; in Bihar and Orissa the number of persons inoculated before proceeding to the *Mela* was 67,000, but in the United Provinces it was only 8,093, and in Bengal 6,388. At the end of January, cholera broke out in the *Mela* area, the total number of seizures being 242. There was consequently real and imminent danger that the disease would be disseminated throughout India, owing to the scattering of the pilgrims. Fortunately neither the United Provinces nor the neighbouring Provinces showed any large increase of cholera during the first three months of 1930, but in April, epidemic conditions prevailed in Bihar and Orissa, where the Districts North of the Ganges were severely affected, and the United Provinces and the Central Provinces also showed an increase in the number of cases during this month as compared with the previous year. When the full figures are available it will probably be found that the incidence of cholera in 1930, as in other years in which large *Melas* were held, was considerably increased.

Plague entered India through Bombay in 1896, and rapidly got a foothold throughout the whole Presidency; by 1902 it had severely affected the Punjab, and a little later the United Provinces were involved. The disease reached its climax in 1907, when no less than 1,160,000 inhabitants of India died as a result of it. But since 1907, excluding a few exceptional years, there has been a continuous decline in the death-rate, and in 1929 the mortality from plague fell below 60,000. The gradual improvement which has taken place in the incidence of this disease is well demonstrated in the diagram opposite, and some sanitarians believe that its complete disappearance from the country, as an endemic affection, may soon occur. Never since its introduction into the North of India has the incidence been so low during the first four months of the year as it was in 1930 in the Punjab and the United Provinces, which for many years past have been the worst plague-centres in India. And as the seasonal maximum of plague in these Provinces occurs in March and April, there seemed reason to hope, at the time of writing, that the year 1930 would establish a new record in the decline in the incidence of plague throughout the North of India.

The incidence of small-pox throughout India in 1927 was moderate, and an improvement occurred in 1928; in 1929, as a whole, the improvement was marked, and the mortality from the disease was half that of the previous year. In January 1929 the incidence generally was low, though the ports of Bombay, Karachi and Madras were infected with small-pox of a severe type. In February and March there were numerous cases in the Bombay, Madras and Bengal Presidencies, but throughout the country as a whole the prevalence of the disease was not above the normal; and by August small-pox was everywhere decreasing, the United Provinces in particular being practically free from it. In November an outbreak occurred in the Bombay Presidency, though it abated before the end of the year, but the incidence increased in the United Provinces, the Punjab and the Central Provinces during December. In the first quarter of 1930 an unusually severe epidemic visited the Bombay Presidency, and, during February and March alone, over 54,000 cases with 11,500 deaths were recorded, the East Khandesh District being particularly severely affected. Small-pox was also prevalent in an epidemic form in the Central Provinces, and nearly all the maritime towns of India were affected. Cases consequently broke out in ships which had touched India, and severe restrictions were accordingly imposed on Indian shipping by many foreign countries, under the International Sanitary Convention. These restrictions, however, besides disorganizing Indian commerce considerably, have in many cases proved difficult to work, and it is being considered whether representations for their relaxation may not be made.

Kala-azar is a disease which although not peculiar to India has severely affected some parts of the country, especially Assam, which is at present the chief seat of the disease. Probably it has been endemic in Bengal and Assam for centuries, but about 1882 it entered Assam in epidemic form through the Garo Hills and thence spread up the valley of the Brahmaputra, reaching the Nowgong District about ten years later. Its advance though slow was deadly, whole villages being devastated and reverting to jungle; the mortality rate of those affected was over 90 per cent., and the very name kala-azar was mentioned with terror by the inhabitants. The nature of the disease was investigated by Indian research workers and the success of the new method of treating it is one of the greatest therapeutic triumphs of recent times, since an

Smallpox in British India

(1868—1928)

1870 1875 1880 1885 1890 1895 1900 1905 1910 1915 1920 1925

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2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200

infection with a case mortality of 90 per cent. has been converted into one with a recovery rate of 90 per cent. The treatment is by the injection of antimony or organic compounds thereof. Hundreds of men have been carefully trained in the technique of inoculating this potent drug wholesale into the affected population of the villages, and the inhabitants, realizing its miraculous effects, have flocked for treatment in thousands, so that by the year 1929-30 the disease could fairly be regarded as being under control. The Kala-azar Commission is still at work in Assam, and although the nature and the treatment of the disease are now thoroughly understood, there yet remains to be discovered the means by which it is transmitted. A sand fly, *Phlebtomus argentipes*, which was originally suspected by the workers at the Calcutta School of Tropical Medicine, is probably the carrier, but experimental proof of this is still lacking.

But more serious than any of these four diseases in its effects upon the general well-being of the inhabitants of this country is malaria, since there is scarcely a part of India that is altogether free from it. In the mortality statistics, cholera, plague, and small-pox are classified separately, and the average annual death-rate from each of these causes is well under 500,000. Other unspecified " fevers ", however, account on the average for between 3,500,000 and 4,000,000 deaths per annum, and allowing for inaccuracies of diagnosis it was until recently believed that as much as two-thirds of the deaths entered under this head should be ascribed to malaria; recent investigations made in special areas have indeed suggested that this proportion may have been considerably over-estimated, and that malaria may not account for more than one-fourth of the deaths reported as being due to " fevers ", the remainder being mostly cases of dysentery, pneumonia, phthisis, and so forth. But even if this revised estimate is correct, the annual number of deaths from malaria would still be substantially larger than that of the deaths caused by any of the other diseases we have been discussing. Moreover this is not the most important aspect of the matter. since the percentage mortality from malaria is very much less than that from cholera, plague. or small-pox, and the number of cases, exclusive of fatal ones, is thus enormously greater. As many as 8 million cases of malaria are treated in the hospitals every year. and the number of cases which do not come up for hospital treatment is of course immense. Apart altogether

from the suffering entailed by this state of affairs, its consequences from the point of view of the country's general economic welfare are appalling; the actual number of working days lost as a result of it must alone amount to many millions annually, and in addition, of course, there is the widespread though incalculable loss of efficiency that ensues from the general weakening effects of the disease upon the human constitution. Epidemic malaria occurs sporadically over practically the whole sub-continent, and the disease is actually endemic throughout large areas, both in the forest-clad country that fringes the mountain ranges, and in tracts of Bengal, Assam, and Burma, where the configuration of the land prevents the drainage of the flood-water after the monsoon; in such regions, besides raising the average level of the death-rate, the disease permanently lowers the vitality of the people and reacts both on the birth-rate and the general economic conditions. Some of the more important practical steps which are being taken by the provincial Governments to cope with this state of affairs will be briefly indicated in Chapter X; as regards the Government of India, its chief activity necessarily consists, for reasons we have already mentioned, in the encouragement of research. As a result of the recommendations put forward at the Conferences of Medical Research workers in 1925 and 1926, the Central organization now known as the Malaria Survey of India,—which has previously been referred to,—was established in 1927, with headquarters at Kasauli, for the study of the disease in this country. The nucleus of the Survey was formed by the amalgamation of the Malaria Enquiry and the Malaria Classes,—which had been financed by the Indian Research Fund Association,—with the Central Malaria Bureau of the Central Research Institute; and it was arranged that the Survey should be maintained by means of an annual grant from the Indian Research Fund Association to cover the cost of a suitable staff, the provision of equipment, and current expenses, until such time as the Government of India should be able to assume direct control of it. The work of the Survey already covers an exceptionally wide field, as will be realized from an examination of its annual report,* and its achievements during the year under review were substantial.

Another grave disease whose incidence throughout the country is considerable is leprosy. An Indian Council of the British

* "Annual Report of the Central Research Institute, Kasauli, including the Annual Report of the Malaria Survey of India."

Empire Leprosy Relief Association was inaugurated on the 27th of January, 1925, by Lord Reading, and the appeal for money which was issued resulted in the creation of an endowment fund of Rs. 20,23,500. The yield from this fund, which amounts to Rs. 1,22,372 annually, is used in carrying out an anti-leprosy campaign in which the respective parts to be played by the Central and provincial Committees are definitely apportioned. The Central Committee's charge includes research, provision of short courses of training for medical men in the diagnosis and treatment of leprosy, propaganda, and survey. No specific drug for treating leprosy has been found; but it has been established that much improvement may result from carrying out treatment along certain lines. Perhaps the most important points which have been made clear are that leprosy, as it is found in India, is capable of easy diagnosis by clinical signs in its early stages, and that patients whose disease is diagnosed early, and who undergo proper treatment for a sufficient period under reasonably favourable circumstances, have every hope of recovery, and, unless at any future time their general health is lowered, they can look forward to continued freedom from all signs of the disease; but that any treatment for leprosy at present available will not go far unless it puts in the fore-front the necessity of raising and maintaining the general resistance of the body both by avoiding other debilitating diseases and by attention to exercise, diet and climatic and hygienic conditions. Further research is being undertaken into the method of transmission, the pathology of the disease, the effect of diet on its course, and improved methods of treatment. The council each year publishes in its annual reports a brief account of the research work done, which is carried on in the School of Tropical Medicine and Hygiene, Calcutta, under Dr. E. Muir, M.D., F.R.C.S. Dr. Muir is provided by the Council with a staff including an expert research worker, Dr. J. M. Henderson, M.B., Ch. B., but his own services are no charge on the Council's funds. The Annual Report of the Council for 1929 informs us that since the date of its inception it has spent Rs. 41,643 in publishing various items of propaganda such as pamphlets, posters, slides and films, most of which have been distributed free of cost. To meet the growing demand for the treatment of leprosy by the latest methods, which has followed the dissemination of new knowledge with regard to it, the Council has, up to the end of 1929, provided for the train-

ing of 421 doctors from all parts of India at its own expense,—which amounted to Rs. 43,979. The method of survey is playing and will play an important part in helping the problem of leprosy to be studied in its true perspective; it has already stimulated much interest among medical authorities, as well as among the general public. This method consists in starting a treatment centre in what is known to be a highly endemic area, and following up infectious cases to their villages and examining contacts for early signs of the disease. The villagers are shown by practical demonstration, posters and lantern slides, what are the early signs of leprosy, how the disease is known to be conveyed from one person to another and what good results can be obtained from treatment. In this way the goodwill and confidence of the people are won, and sufferers, instead of trying to hide their disease, come forward in the hope of being cured. It is possible to carry out a much more thorough census by this method than could be done otherwise. The survey has brought out many useful and interesting facts, among the chief of which are that leprosy is most prevalent among semi-aboriginal tribes who have left their seclusion but have not yet adopted the sanitary measures common among more civilized people; that the disease is frequently transmitted to families of better class when these semi-aboriginals are employed by them as servants; that a single highly infectious case may often infect not only a whole village, but a group of villages; and that frequently there is a fairly obvious pre-disposing cause for infection, such as improper diet, or chronic under-feeding, or the presence of some other disease,—as for instance syphilis, malaria, hookworm disease, or filariasis. These factors of course vary in different villages and in each individual. The provincial Committees receive from the Central Committee a certain proportion of the income of the endowment fund, and they, also, are mainly concerned with finding out the leprous patients, encouraging them to seek treatment, and making proper provision for it.

Mention has already been made of the activities of the Government of India in connection with international co-operation in medical matters. These have increased substantially since the war,—largely as a result of the establishment of the Health Organization of the League of Nations. This body already performs extremely valuable functions, which seem likely to increase, since pestilence cares nothing for national boundaries, and diseases

which start from a localized focus are liable to spread from country to country unless there is some closely co-ordinated and efficient international organization to take suitable preventive measures; and for lands such as India, where cholera, plague, and small-pox are endemic, the work of the International Health Organization is peculiarly important, since history affords many instances,—long before the introduction of modern means of transport, which have increased the potential danger substantially,—in which these scourges have spread outwards from their original focus over enormous distances with devastating effect. At present the organization subdivides its activities geographically into 'Zones', and India falls within the 'Eastern Zone', whose headquarters are at Singapore. The functions of the Bureau of the International Health Organization there, are to broadcast information concerning the epidemiological conditions of the countries which fall within its sphere of operations, to co-ordinate research, and to organize international campaigns against infectious diseases. During the year under review the annual session of the Advisory Council of the Bureau was held in Java, and was attended on behalf of the Government of India by Major-General J. D. Graham, C.I.E., I.M.S., who had held the Chairmanship of the Council for the last four years, but who, after this occasion, resigned it. The Government was also represented during the year under review at the meetings of the Permanent Committee of the *Office International d'Hygiene Publique* in May and October; and amongst other Conferences of international medical organizations to which delegates have been sent, mention may be made of the Congress of the Royal Institute of Public Health held at Zürich in May, 1929, the International Congress of Psychology at Yale University, U.S.A., in September, and the International Conference on the fourth Decennial Revision of the International List of the Causes of Death at Paris in October. A noteworthy event, also, was the tour in India during the months of August, September, and October, of six members of the Malaria Commission of the League of Nations, who were deputed by the Health Committee of the League, as a result of an invitation received from the Government of India, to visit this country. The object of the visit was that members of the Commission should obtain first-hand acquaintance with conditions in India, to investigate the anti-malarial work which is proceeding, and to see how much of this work would be

applicable elsewhere. The expenses of the visit were borne by the League of Nations; and the discussions and exchange of ideas which resulted from it are likely to be of great benefit to malaria workers in India.

From discussion of international co-operation in the prevention of disease, we may logically proceed to consider the problems that arise from the abuse of intoxicating drugs and liquors in this country, and from their export. As regards the export of opium, the policy of the Government of India is in any case governed by international agreements, but has actually gone considerably further than these require; export of opium to any non-Asiatic country other than the United Kingdom is prohibited altogether, and the quantities received by the United Kingdom are strictly controlled by means of the "import certificate" system, and used for medical and scientific purposes only. The "import certificate" system was also applied in 1923 to other drugs covered by the Hague Convention, and in 1926 the order was revised so as to fall into line with the new definitions contained in the Geneva Convention. In June, 1926, it was announced that exports of opium for other than medical and scientific purposes would be reduced by gradual stages until they ceased altogether at the end of the year 1935. In consequence, the exports in 1927 were 90 per cent. of the exports in 1926, and 80 per cent. in 1928, and 70 per cent. in 1929; and during the current year they will be 60 per cent. From the 19th March, 1925, the transhipment at ports in British India of any of the drugs covered by the Hague Convention was prohibited unless covered by an export authorization or diversion certificate issued by the exporting country, and this order was revised in February 1927 in the light of the Geneva Convention.

The adoption of this policy by the Government of India has entailed great financial sacrifices. During the last eleven years, the area under poppy cultivation in British India has been reduced by more than 76 per cent, and the present cultivation is almost entirely confined to the United Provinces. The area under cultivation in British India in 1929 was only 42,186 acres, and the total quantity of crude opium purchased from Indian States was reduced from 11,400 maunds in 1924-25 to 6,500 in 1925-26. Indian States have, of course, brought their regulations regarding opium into conformity with the international obligations of the

Government of India; but during the year 1927-28, as has been mentioned in previous issues of this Report, the Government of India appointed a Committee of Enquiry,—after holding a conference with representatives of the producing States,—to investigate the possibility of bringing the cultivation of the poppy, and the manufacture, storage and distribution of opium, in what are known as the Malwa States, under closer control. The Committee's Report was under consideration during most of the period now under review, but a definite line of action was decided on towards its close and negotiations were opened with certain States in pursuance of it.

Statistics and reports issued by the Secretariat of the League of Nations afford ample proof of the earnestness and success with which the Government of India have fulfilled the duties imposed upon it by its international obligations. As regards the Provinces, their Governments have acted in the matter both singly and collectively, the most important collective action having been the conference of provincial Ministers charged with the administration of excise which was held in 1926 to discuss the co-ordination of excise policy throughout India. In the same year the Governmont of India suggested to the provincial Governments certain measures which might contribute towards a solution of the problems that had been discussed, and indicated in particular that an attempt should be made to ascertain the actual causes for the existence of what are known as "opium black spots",—that is to say, areas where the average consumption per head of the population is markedly higher than the average for British India as a whole. The Governments of Bengal, the Central Provinces, Bihar and Orissa, Bombay, and Madras accordingly all appointed Committees to enquire into conditions in certain specified areas, while that of the United Provinces asked its existing licensing boards to state their views upon the position within certain municipal limits after such enquiry as they considered necessary. A proposal to organize some system of *liaison* between the various governmental authorities was abandoned as superfluous, but the Government of India, shortly after the conclusion of the period under review, convened an important conference, which will come up for discussion in the next issue of this Report, in order to collate and compare the information obtained before the different provincial Governments themselves decided individually on the action they considered it necessary to take. Except in Burma, Assam, Orissa and Calcutta, the

actual smoking of opium, which was recognized by the first Opium Conference at Geneva in 1925 as being the real evil, is not a general practice, although it does indeed occur. The policy of the Government of India is gradually to suppress the use of prepared opium for this purpose altogether. Total prohibition of smoking has as yet been enforced only in Assam, but elsewhere the sale of prepared opium is forbidden, and so is its manufacture except by an individual who prepares it for his own use from opium lawfully in his possession. The Government of Burma has adopted very stringent measures for the ultimate extinction of opium-smoking. In 1924 it issued rules prohibiting any person other than a registered smoker from possessing prepared opium, and a register for opium-smokers was opened for six months from the 9th of January, 1924. No new names can be added to the register, and with the gradual disappearance of the persons who were registered on the 8th of July, 1924, opium-smoking will cease to be permitted except in a few backward tracts. The total number of registered smokers in Burma on 31st of December, 1929, was 12,151. In Bihar and Orissa opium-smoking is prohibited except by licensed smokers. Under the respective Opium-Smoking Acts of the Punjab and the United Provinces, opium-smoking in company has been prohibited there; and the provisions of the Punjab Opium-Smoking Act have been extended to Delhi, the North-West Frontier Province, and Baluchistan. Under the Punjab Opium-Smoking Act an assembly of three or more persons, and under the United Provinces Opium-Smoking Act an assembly of two or more persons, is designated an opium-smoking assembly, if the common object of the persons composing it is to smoke or prepare opium for smoking purposes, and penalties are prescribed for being a member of it. In Bengal, legislation is under consideration for making opium-smoking by persons other than registered smokers a penal offence. In 1929 the Government of the Central Provinces passed legislation prohibiting opium-smoking in company and designating an assembly of two or more persons an opium-smoking assembly. The Madras Government, however, postponed the consideration of its Bill, which aimed at prohibiting opium-smoking altogether in the Presidency, pending the passage of the Dangerous Drugs Bill, and the Government of Bombay has not yet taken action on its proposal to prohibit the manufacture, possession and sale of prepared opium except

under a licence; but both these Governments have been sent reminders on the subject.

The figures showing the decline in the consumption of opium throughout India during the past decade or two are very striking. Between 1910-11 and 1928-29 the consumption has fallen in Madras from 1,039 to 879 maunds; in Bombay from 1,435 to 685; in Bengal from 1,626 to 988; in Burma from 1,444 to 631; in Bihar and Orissa from 882 to 629; in the United Provinces from 1,545 to 562; in the Punjab from 1,584 to 983; in the Central Provinces from 1,307 to 587; in Assam from 1,509 to 626; in the North-West Frontier Province from 69 to 50; and in Baluchistan from 15 to 14 maunds. In 1910-11 the consumption for the whole of British India was 12,527 maunds; in 1928-29 it was 6,771 maunds. At the same time the revenue derived from opium in the various Provinces of India, owing to the enhanced price at which the drug is sold, has risen from Rs. 1·63 crores in 1910-11 to Rs. 3·40 crores in 1928-29.

An important "All-India" measure already referred to, and known as the Dangerous Drugs Bill, which is designed to centralise and vest in the Governor-General in Council the control over certain operations relating to dangerous drugs, and to increase and render uniform throughout British India the penalties for offences relating to such operations, was introduced in 1928 and has now been passed; it should prove of great assistance to the authorities in grappling with the problems raised by drug-addiction. Of late years the increased use of cocaine and allied drugs in the larger cities of India has attracted a good deal of public attention. The authorities are fully alive to the danger and have developed, and are continually improving, detective and preventive measures, and seizures of this drug and arrests of those who traffic in it are frequent. The true coca plant is not grown in India, nor is cocaine manufactured, but nevertheless several Governments, as a precautionary measure, have passed acts prohibiting the cultivation of cocaine-yielding plants. These local acts will however be superseded by the Dangerous Drugs Act, since it contains provisions to the same effect.

On the whole, the consumption of alcoholic liquors does not constitute a serious problem in India except in the large industrialized towns. The Muslim population is practically unaffected by it, owing to the well-known religious injunction against the use of alcohol, which is for the most part faithfully obeyed. Among the

congested labouring population of Bombay and Calcutta, and in a few other places, the evil exists, but undoubtedly India compares very favourably with other countries in this matter. There has, nevertheless, been a good deal of public discussion in recent years on the desirability of introducing compulsory prohibition. Much of this discussion is unquestionably inspired by genuine reformist zeal; at the same time it can also be made to serve regrettable political ends, and has been used by nationalist agitators, both during the Non-Co-operation Movement after the War, and during the similar troubles which have occurred since the conclusion of the period under review, as a means whereby drink-shop proprietors may be prevented, by picketting and boycott, from carrying on their lawful trade, in order that the revenues of the Government may be reduced. The general trend of official policy for many years has been to reduce the consumption of alcoholic liquors to a minimum, but absolute prohibition, in the sense that there should be no consumption of liquor except for medical or ritual purposes, would be quite impracticable in India, not only for geographical reasons,—which are obvious,—but also because of the exceptional facility with which "toddy" and similar inebriating decoctions can be manufactured in the country itself. The better plan appears to be to continue the present policy adopted by the Government of India and some provincial Governments, which aims at inculcating temperance by providing facilities for persons who require reasonable refreshment from alcoholic drinks, but regularizing the price in such a way as to discourage their abuse. The Government of India is not now primarily concerned with the consumption of alcoholic liquors except those imported from abroad, the duty on which forms a useful item in the Central Revenues. From time to time, however, the subject of alcoholic drinks comes up for discussion in the Legislative Assembly or the Council of State, and on these occasions the Government of India has made it abundantly clear that its policy in such areas as are subject to its direct administration is to promote temperance and moderation. At different times the Governments of Bombay, Madras, and the United Provinces have accepted prohibition or abstinence in general terms as the goal of their policy, and in 1927, the Madras Legislative Council passed a resolution recommending that the total prohibition of alcoholic drinks in the Presidency within the next 20 years should be the declared object of the

provincial Government's policy. A local option Bill was passed in Assam in 1926, and the Government of the Central Provinces aims at the ultimate extinction of the consumption of country-made spirit. There is, however, reason to believe that there are limits beyond which the policy of checking the consumption of liquor by raising the price cannot safely go, without directly encouraging the manufacture of illicit liquor. The Punjab Government have had to reduce the duty on country spirit, and the Bombay Government, in its review of the Administration Report of the Excise Department for 1926-27, explained certain administrative difficulties which had arisen out of the policy of partial prohibition, and stated that on account of financial considerations further progress in the direction of prohibition must necessarily be slow. On the whole, therefore, the various governing authorities in this country may be said to have adopted all reasonable measures within their power to guard against the spread of the drink habit, and to make it difficult and expensive to gratify.

Before we pass on to the other matters that fall within the scope of this Chapter, there is one other,—and extremely important,—medical problem which requires consideration; that is, the health and material welfare of India's women and children. The manner of life to which ancient tradition condemns the larger part of the female population of this country, and in particular the medical and social problems which are created by the institutions of *purdah* and child-marriage, have aroused widespread interest throughout the world, and as the years pass the urgent necessity of providing medical facilities more fitted to mitigate the consequences of these customs has obtained increasing recognition, both from official and private individuals and institutions. Probably the first organization on a large scale for putting modern medical assistance within the reach of Indian women was that established by the Countess of Dufferin, wife of the Viceroy, in the Eighties of last century; and since that time the wives of other Viceroys have extended and developed her work, until to-day there are no less than three important institutions providing medical relief for the women of this country. It should be explained however that these bodies are not entirely official, and moreover cannot strictly speaking be classified either as Central or provincial subjects. The first of them, generally known as the Countess of Dufferin's Fund, or more properly as the " National Association for Supplying Medical

Aid by Women to the Women of India ", has for its object the training of women as doctors, hospital assistants, nurses, and midwives, as well as the provision of dispensaries, wards, and hospitals. As originally constituted, the institution made an excellent start, but it was soon realized that its income would be insufficient for the full attainment of its objects, and in particular that the remuneration that it offered to women doctors was inadequate. As a result, a special Women's Medical Service was constituted in 1914 as an adjunct to the main organization, and the Government of India now subsidizes the Fund to the extent of Rs. 3,70,000 per annum.

Readers of the last issue of this Report will remember that during the year 1928 the development of the Women's Medical Service suffered a check. The appeal for a larger subsidy from the Government of India, in order that the number of first-class medical women in the Service might be increased, was rejected on the ground that medical relief in the Provinces is a transferred subject, and that the question whether Central revenues could properly be expended on objects which would primarily benefit the Provinces raised important constitutional problems which were at the time under investigation by the Statutory Commission. In consequence, the *cadre* of the Women's Medical Service, which had amounted to 44 in 1927, declined to 42 in 1928, and in January 1929 to 41. The year 1929 continued as a whole to be overshadowed by this financial uncertainty, but some relief was obtained by the payment of grants from the Governments of the Central Provinces, and Bihar and Orissa, equal to half the pay of the officers of the Women's Medical Service employed in those Provinces. Moreover the Government of the United Provinces promised a grant for 1930, though those of the Punjab, Bengal, Bombay and Madras again refused, pleading financial stringency. It was however possible to increase the *cadre* of the service, temporarily, to 44; any permanent increase however remained impracticable, since the provincial grants are dependent upon the annual vote of the Legislative Councils, and are thus uncertain. All but one of the existing staff of officers hold British medical qualifications, and 21 of them hold Indian qualifications as well; 22 of the officers are of Indian domicile. Fifteen members of the Service are working in areas for which the Government of India is responsible or in Indian States, 8 of them being on the teaching staff of the Lady Hardinge Medical

College in New Delhi. The United Provinces are served by 7 officers,—of whom 2 are seconded by the provincial Government and paid by it; the Central Provinces and Berar, the Punjab, and the Presidencies of Bengal and Bombay are served by 3 each; and the Presidency of Madras, and Bihar and Orissa, by 2. Four or 5 doctors form a leave reserve. This staff is of course admittedly inadequate for the needs of the country, and were it not for the fact that additional women doctors are working in the Mission Hospitals scattered throughout India, the deficiency would be still more evident. Apart from these fully qualified ladies, the provincial Governments themselves employ women doctors in "sub charge" under Civil Surgeons in dispensaries for women in connection with Civil Hospitals,—some of whom are in charge of separate *Purdah* Institutions; but these doctors mostly hold qualifications only of the Sub-Assistant Surgeon class, and are paid no more than between Rs. 75 to Rs. 150 *per mensem,* and although they undoubtedly relieve much distress in minor ailments, they are not qualified to treat women afflicted with serious disease. Such women, therefore, unless they are rich enough to travel to the nearest specialist, must call in a male doctor who may have insufficient experience of women's diseases,—or else remain untreated. And even now-a-days, when the restrictions of the *purdah* system are rapidly loosening, there are few Indian women willing to summon a male doctor until the last moment. Thus there is still crying need for a stronger service of women specialists supplied with well equipped hospitals suitably placed throughout the country, particularly in those areas where the women are socially backward and observe *purdah* strictly. It is however encouraging to note that the improvement of communications, and in particular the extension of motor transport, is leading to a steady increase in the use of such facilities as already exist; indeed it is astonishing how many patients arrive at the women's hospitals by motor omnibus from villages hitherto considered quite inaccessible except by means of bullock carts, whose rate of progress on the unmetalled *kachcha* roads averages often less than 2 miles an hour. During the year two Indian women graduates were sent to England for post-graduate study; one returned in October, having obtained the qualification M.R.C.S., L.R.C.P., and has been admitted to the Women's Medical Service; the other was due to return in May 1930. One

new member, a graduate of the Lady Hardinge Medical College, was admitted to the Service during the year. The special research worker paid for by Lady Irwin's Research Fund has been engaged throughout the year in investigating the causes of still-birth and neo-natal death at the Haffkine Institute in Bombay and at the Government Maternity Hospital in Madras; useful statistics for her report have also been obtained from many other hospitals and maternity homes throughout the country. The report is to be published during the year 1930. Another woman specialist research worker has been engaged with an expert staff, under the auspices of the Indian Research Fund Association, in investigating the causes of maternal mortality, especially in connection with the disease known as anæmia of pregnancy. This report also is expected in 1930. An enquiry is also proceeding among the women of the Punjab into the causes of osteomalacia, a disease in which bones soften and bend to such an extent that delivery is obstructed and much suffering is entailed.

Mention has already been made of the Lady Hardinge Medical College at New Delhi, to which 8 officers of the Women's Medical Service are attached as members of the teaching staff. In October 1929, the Governing Body of the College, having previously approached the provincial Governments and Indian States for financial assistance without obtaining any appreciable response, applied to the Government of India for the continuance of the annual grant of Rs. 3,14,500 which had been made to it from Central revenues. In view of the importance of the institution and the useful work it had performed in training qualified medical women for work in female hospitals, the Government of India decided to continue the grant during 1930-31; but as the administrations which chiefly benefit by the work of the College are undoubtedly those of the Provinces and the Indian States, the Government of India urged that the Governing Body of the College should make every endeavour to obtain a large amount of financial support from them. At the same time a Committee, which, as finally constituted, consisted of Major-General J. D. Graham, Public Health Commissioner with the Government of India, Mr. B. L. Nehru, of the Indian Audit and Accounts Service, the Rev. J. C. Chatterjee, M.L.A., and the Honourable Raja Nawab Ali Khan, was appointed to make a comprehensive enquiry into the financial position of the institution and to advise whether any alteration is necessary in

the constitution of the Governing Body. As a preliminary measure Mr. Nehru is making a detailed enquiry into the finances of the College. Another noteworthy event in connection with the medical institutions in Delhi, which may be conveniently mentioned at this stage, was the foundation of the new combined hospital which has long been needed. The institution is to be named after H. E. Lord Irwin, who laid the foundation stone in January 1930. Its size, however, will not be as great as at one time appeared likely, since when the Standing Finance Committee approved, on principle, in the preceding January, the project of constructing it, it at the same time asked for further information in order to satisfy itself that the estimated cost of Rs. 70,00,000 was not excessive; and after a careful and thorough re-examination, a fresh scheme was prepared, which will ultimately cost Rs. 68,87,000,—though providing 260 beds instead of the 200 which would have resulted from the original scheme. At present, owing to the prevailing financial stringency, only a portion of the building is being proceeded with, which is estimated to cost Rs. 45,38,000, and orders for it were issued in October 1929.

Of the three institutions for providing medical aid to women to which we have referred, the second is the Victoria Memorial Scholarships Fund, which was founded by Lady Curzon about thirty years ago. The object of this organization is to provide means whereby the indigenous *dais*, or midwives, in this country may be given at least some rudimentary training in the principles of modern maternity practice, which, in view of their ignorance, uncleanly habits, and the degrading and menial tasks which their clients are accustomed to require them to perform, is a matter of the utmost importance. Progress in the instruction of illiterate women in maternity work is however bound to proceed but slowly, and it is thus difficult to make a report on the subject in any one year substantially different from what it was in the last. In particular, the provision of adequate medical aid in rural India for women at the time of child-birth presents extraordinary difficulties. Trained midwives can hardly earn a living in the villages without some form of subsidy; moreover for obvious reasons they do not as a rule take kindly to village life, and even those who have been born and brought up in the remoter parts of the country tend to seek work in the towns; it is moreover frequently unsafe in the villages for them to live alone. Thus, from the very nature of

things, improvement in the methods of the *dais* in rural India is bound to be a very gradual and apparently disappointing process. It is nevertheless significant that the problems and needs of rural India have recently been obtaining so much attention, and this, in time, is bound to lead to good results. The year 1929 was an important one in the history of the Victoria Memorial Scholarships Fund, in that the Committee undertook, for the first time since 1917, a comprehensive survey of the results that have hitherto been achieved, which brought some interesting facts and opinions to light which will be of considerable assistance to the headquarters staff. The method adopted was to hold four " regional " conferences; an " All-India " Conference may be fruitful on occasions, but in this case it was felt that the differences in detail in various areas would make helpful discussion difficult, despite the fact that the main problems are doubtless the same. The conferences were held at Lahore, Lucknow, Ajmer and Nagpur, and were attended by a small number of delegates, consisting of medical men and women and health workers, who were selected because of their experience and knowledge of the work; and certain conclusions of considerable interest were reached. It was agreed that, despite certain superficial appearances to the contrary, the progress achieved since 1917, when the last general review of the work was undertaken, has actually been slow throughout the country as a whole; although in some places, especially the towns, rapid and spectacular results have been achieved; but these, owing to the publicity which they have obtained, tend to give the impression that the general advancement has been greater than is in fact the case. That an increasing number of *dais* are under training is due to the fact that health visitors have increased in large numbers since 1919 and are themselves imparting a certain amount of instruction in elementary hygiene. So far as it goes, this is satisfactory, but the quality, even more than the quantity of the instruction, has to be borne in mind. If the health visitor is of reasonable education and experience she as a rule makes an excellent teacher, but in many places the visitors can scarcely be said to possess these qualities, and in addition have not the personality to control the *dais*, who are mostly older women whose acquaintance with maternity work covers a longer period. The need of continued supervision of the work of the *dais* after they have been given training was stressed by even the most successful teachers at

all the conferences that were held. Some of the resolutions passed showed very strong feeling on the subject, as for instance that which stated that it was "useless and harmful to continue the training of *dais* unless adequate provision for supervision were made". The difficulty of course is partly personal and partly one of finance, since on the one hand the number of competent midwives or health visitors available for carrying on this work is insufficient, and on the other, the expense involved in supervising them is beyond the means of most municipalities and of practically all rural areas. The question of supervision is bound up with that of registration, and on this subject also resolutions were passed. In the previous issue of this Report reference was made to the fact that Bills for the registration of nurses, health visitors, and midwives, were to be introduced into the Legislative Councils both of the Madras Presidency and the Punjab. That for Madras has actually passed into law, but the Punjab Bill has not yet been introduced; it is of course too soon to say what the effect of the legislation in Madras will be, but it is an experiment which the whole of India will watch with interest. Ante-natal work, or the care of the expectant mother, has only been undertaken since 1917. Most of the workers in the field agree that it is theoretically sound, but it was evident from the discussions at the conferences that there is not much evidence of enthusiasm for it. The arguments for undertaking ante-natal work for the direct benefit of the patients alone are powerful enough, but when one adds to this the indirect advantages to be gained by combining this work with the training of *dais*, the apathy is hard to understand. It is to be hoped that enthusiasm will gradually develop as the practical value of activities on these lines comes to be more generally understood. But perhaps the most important conclusion arrived at separately by all the regional conferences was that it is absolutely necessary to continue training the indigenous *dais*, since there is no prospect of supplanting them by other trained midwives for years to come. This is especially interesting in view of the fact that in 1917 some authorities were in favour of abandoning the training of these women altogether and concentrating on the instruction of another type. During the twelve years that have intervened, however, the progress made towards dispensing with the *dais* was negligible, and it is clear that instead of attempting to do without them, the proper course is to increase the numbers under training, to per-

fect the training itself, and to try to provide some form of supervision whereby their standards of work may be maintained at the level to which they have been raised. In this connection it is interesting to note that Dr. Muthulakhshmi Reddy moved a resolution in the Madras Legislative Council during the period under review to the effect that the training of indigenous *dais* should be undertaken in the Districts of the Presidency. Since Madras had previously claimed that it would be in a position to replace the *dais* by trained midwives within a measurable time, this indicates that the claim was only valid in respect of the towns, and that the rural areas of Madras, like the rest of India, are still almost entirely dependent on the *dais* for obstetrical aid. Naturally the progress which can be achieved in the attainment of higher standards of work by the *dais* must depend to a large extent on the amount of encouragement they receive from the public, and although some classes are beginning to appreciate modern methods in midwifery, and to employ only those who have adopted them, the co-operation obtained from others is anything but satisfactory, and the *dais* complain bitterly, not merely of low rates of pay, but of the grudging of necessities like soap, hot water, and clean linen. Such improvement as there is in the attitude of the public is of course most marked among the upper and middle classes in the towns. On the whole it would seem that the demand for *dais* trained in modern methods is not in advance of the supply.

The last of the three institutions under consideration is the Lady Chelmsford League. A large proportion of the income of the League is spent in aiding the Health Schools which now train health visitors in all the major Provinces; and as trained workers are an absolute necessity in public health work, the services which the League performs are thus of very great value,—even more perhaps for their future educational potentialities than for their immediate practical results. Mention was made in the previous issue of this Report of the fact that a new Health School had been established in Lucknow in 1928, and a satisfactory event during the year under review was the re-opening of the Health School in Madras, which is sure to lead to an improvement in the quality of the work throughout the whole Presidency. In consequence there are now seven Health Schools in operation in India, two of which are entirely supported and managed by provincial Governments, while a third is a Government institution in all but name. The

Bengal Health School in Calcutta, however, is still run without any support from the local Government. All the Schools are continuing to do good work, but complaint is still made of the fact that the number of candidates of the most suitable type that come forward for training is inadequate. In last year's Report it was mentioned that facilities for training qualified medical women in health work specially organized for the benefit of women and children were absent in India,—a fact which was regrettable since more and more medical women are required for important posts concerned with the organization of maternal and child welfare in the Provinces and larger towns. But it is satisfactory to be able to record that the establishment of the new Public Health Institute in Calcutta,—which has already been referred to,—is likely to remedy this deficiency, since among the other departments of the Institute will be one specially devoted to maternal and child welfare, which should provide the means of giving a first-class training to medical men and women in this important branch of public health. Another gratifying event of the year was a Resolution passed at the Lucknow Conference which may lead to the provision of training facilities for sub-assistant surgeons in health work in the United Provinces. It was felt that trained medical women of this grade were urgently required, and the State Medical Faculty of the Province has appointed a committee to investigate the matter. The presence in the country of the members of the Royal Commission on Labour during the winter of 1929-30 gave the Central Office of the National Association for supplying Medical Aid by Women to the Women of India,—to which, as we have seen, the Lady Chelmsford League is affiliated,—an opportunity of placing on record its opinions in connection with the medical needs of female industrial workers. One of the staff gave evidence before the Commission, and in the memorandum which the Office also prepared, attention was urgently drawn to the high rate of infant mortality in industrial areas; it was pointed out that investigation into the causes of this mortality was particularly desirable, and had indeed been asked for by medical women on several previous occasions. The need for the services of medical women health visitors and midwives in industrial areas was also pointed out, and methods were suggested whereby this object might be achieved. It is to be hoped that as a result of the activities of the Commission a greater demand for trained health workers

will arise from employers of all kinds. "Baby Week" continues to be a feature of public health propaganda, and the activities in connection with it have had an excellent effect in stimulating public interest in health problems. The "Irwin Cup", given by Rajah Raghunandan Prashad Singh, M.L.A., for competition during "Baby Week" was won this year by Rewari, in the Gurgaon District of the Punjab. The "runner-up" was Madanapolle, in the Madras Presidency. Much of the most valuable work of the Lady Chelmsford League is difficult to report upon. Its position as an All-India organization places it in touch with child welfare work and workers all over the country, and it is able to render valuable service by guiding the movement as a whole, advising its promoters, and in fact performing in some ways the functions of a Government Department by undertaking work for which provision is not made in the office of the Public Health Commissioner with the Government of India.

Apart from these three organizations, which are to some extent under the control of the Government of India, there is another body which renders such conspicuous services to the welfare of the women and children of India, and to public health propaganda in general, that to omit mention of it would scarcely be fitting, despite the fact that it is a purely voluntary and independent institution. This is the Indian Red Cross Society, which was constituted in 1920, and within the brief space of ten years has achieved admirable results. An important event in the life of the Society, the consequences of which will come within the scope of the next issue of this Report, was the appointment in the latter part of 1929 of a committee to consider the possibility of effecting an amalgamation with the Lady Chelmsford League. The League, as we have seen, devotes itself almost exclusively to maternity and child welfare, and work for similar or indeed identical objects continues to be the most prominent activity of many of the branches of the Red Cross. Its achievements in this field are indeed on a very large scale, and it is estimated that as much as Rs. 1,81,683 were spent on it during 1929. Almost every branch is doing something to improve the health of mothers and babies, and the activities reported include organization of Child Welfare Centres, both civil and military, training of *dais*, granting of scholarships for hospital training in midwifery, training of health visitors, organisation of a nursery school, education

of mothers in mothercraft and sewing, and the organization of "Baby Weeks". The total number of Child Welfare Centres under Red Cross auspices is approximately 200, and some idea of the number of mothers and babies cared for may be gathered from the fact that in Madras the attendances reached about 1,000,000 and in the Central Provinces and Berar they were over 300,000. And apart from activities directly intended to improve the lot of India's women and children, the Society performs very useful work in the cause of public health in general by means of propaganda and publicity, as for instance through the issue of large quantities of pamphlets, posters, and magic lantern slides from the central *depôt*. During the year the Society's existing range of propaganda literature was increased by the publication of five new pamphlets, and the total number of pamphlets that were issued for use in India,—in as many as 12 languages,—amounted to 38,928. Another conspicuous feature of the Society's work during 1929 was the help it rendered to the destitute and afflicted after the disastrous flood in the Punjab caused by the bursting of the Shyok Dam,—which has been described in Chapter I. The Punjab Provincial Branch of the Indian Red Cross immediately organized a relief fund and sent help to the striken areas. The fund ultimately reached the magnificent total of Rs. 3,27,692, of which Rs. 1,75,000 was contributed by the Indian Peoples' Famine Trust Fund and the rest by the public. This remarkable achievement was largely due to the widespread organization of the Red Cross throughout the Province, almost every centre and even large numbers of village schools contributing their quota. The proceeds of the relief fund were distributed through the District Branches of the Society in the form of food, seed grain, clothing, fodder for cattle, quinine, milk and medicines, hired tents for the homeless, and cash grants for the reconstruction of houses. Two useful organizations which work in close co-operation with the Indian Red Cross Society are the Indian Council of the St. John Ambulance Association, and the "St. John Ambulance Brigade Overseas within the Empire of India". The former is a teaching body, whose main object is to organize courses of instruction for men and women in first aid, home nursing, hygiene and sanitation, while the latter is a uniformed, disciplined body of ambulance workers who place their services at the disposal of the public in any emergency and perform public duty in places where

accidents are liable to occur. Under the auspices of the St. John Ambulance Association, 1,550 courses were held during 1929 in the subjects mentioned and 24,773 persons received instruction. The classes were organized among railwaymen, miners, soldiers, the police, in all types of educational institutions, and in prisons. The work of the St. John Ambulance Brigade in India is organized regionally in four " districts ", whose headquarters are at Lahore, Calcutta, Bombay and Madras. Each of these Districts is composed of a number of Ambulance and Nursing Divisions, and the total strength of the Brigade in India now consists of 1,941 ambulance and 206 nursing members. Among the ambulance divisions are railway divisions, college divisions and labour divisions in mills, and the nursing divisions enrol both European and Indian members. A large number of accident cases were treated in 1929, and the Bombay divisions rendered conspicuous service during the disturbances in February and May.

Among the various activities for improving the material wellbeing of the people of India, the movement for " Physical Education " had recently come to attract a remarkable degree of public interest, and there is an increasing demand for compulsory physical training in educational institutions of every kind. In some of the primary and secondary schools the work is already emerging from the stage of indiscriminate " physical jerks " for all, regardless of age, sex, or condition, to that in which some degree of scientific attention is given to the bodily, mental, and social conditions of the individual child. In the Universities, physical training is still largely voluntary, but in those of Calcutta, Allahabad, Lucknow, and the Punjab and in some of the Colleges affiliated to Madras and Bombay Universities, the subject has begun to be recognized and directed by the University authorities. The movement moreover extends far beyond the scope of purely educational institutions which affect only the school-going population; the " Public Playground Movement ", for instance, which has been initiated in several of the larger cities, has already assumed a position of considerable importance, and in Calcutta, Madras, and Bombay the Municipalities have reserved open spaces to which hundreds of young people resort daily for physical culture and are provided by the organizers of the movement with trained leaders and special apparatus. Another striking and significant development is the rapid increase throughout the whole

country in the number of sports clubs, and in the quantity of spectators that are attracted by the competitions organized by the club members. No general movement for physical culture can hope to develop satisfactorily unless it is under capable leadership, and it is gratifying to note that this, even at such an early stage, is not lacking. Probably the most successful and important institution for training leaders in physical culture is the National Y. M. C. A. School of Physical Education in Madras, whose students are recruited from all parts of India. Its courses of instruction have obtained definite recognition not only from Madras, but also from Bengal, the Punjab, Assam, Burma, and several of the Indian States, and students are officially deputed to it from most of these places; and graduates from the school are in great demand from the numerous educational institutions, municipal playgrounds and welfare organizations that require directors in physical training.

The movement for physical training has of course an important bearing on the various military problems with which India is confronted, and which have been discussed in Chapter II. In its report, the Indian Sandhurst Committee dwelt at some length on the existing defects of the system of education in India from the military point of view, and on the disadvantages to which Indian boys who desired to take up a military career were consequently exposed in comparison with youths of Western countries. A resolution on the subject was put forward in the Legislative Assembly, towards the end of the period covered by our previous Report, in the following terms:—

> "This Assembly recommends to the Governor-General in Council that steps should be taken as early as possible to provide for compulsory physical training, military drill and rifle practice for Indian boys attending schools and colleges between the ages of 16 and 20 years."

The resolution was debated both on the 30th of January and the 15th of February 1929, and on the latter date the following amendment of the original resolution, moved by a non-official member, was adopted by the Assembly with the concurrence of the Government representatives:—

> "This Assembly recommends to the Governor-General in Council that with a view to remove the defects in the character training of Indian youths as emphasised by

> the Skeen Committee, steps should be taken as early as possible to provide compulsory physical training, games and drill for Indian boys attending schools and colleges between the ages of 12 and 20, and to provide and encourage the use of miniature rifle ranges."

In accepting the amendment, the spokesman for the Government of India defined the official policy in the matter thus:—" For the Provinces it is not competent to us to accept either the original resolution or the amendment, but we do agree to forward the amendment, together with copies of the debate, to local Governments to ask them if, on considering the suggestion, they come to the conclusion that it is something which they can accept, to introduce the principle and further to submit to us reports from time to time to show what action they are taking. . . . We accept the principle of compulsory physical training; we accept the principle of compulsory drill; we accept the principle of compulsory games. As our resources permit and as schemes are worked out, and as far as our finances go, we hope to be able to introduce them in the schools in the areas for which we are responsible. As regards the miniature rifle ranges again, our attitude is that in consultation with the heads of minor Administrations we shall do what we can,—again as I have said subject to our financial resources,—to give effect to this proposal ". As a result of the resolution adopted by the Assembly the Government of India has addressed local Governments and administrations on the feasibility of making provision for compulsory physical training, games, and drill, for Indian boys between the ages of 12 and 20 years, who are attending recognized educational institutions, and the possibility of providing and encouraging the use of miniature rifle ranges is also being examined.

Before we proceed to consider the various educational institutions with which the Government of India is directly concerned, there is one other voluntary educational activity which has assumed sufficient prominence within recent years to require mention. This is the movement organized by the All-India Women's Conference for educational and social reform. The first of these Conferences was held in 1926, and since that date their promoters have built up a large, responsible, and well co-ordinated organization for expressing the opinion of the women of India on the more important matters affecting their welfare. At the outset, the Con-

ferences were devoted to educational questions only, but the scope of their activities rapidly widened, and the organization is now subdivided into an Educational and a Social Section, each with its own Secretary who works in co-operation with the general Organizing Secretary. The Educational Section concerns itself mainly with primary education, and has rendered assistance both to the Government of India and to the provincial Governments on this subject,—the co-operation of the members of the Standing Committee of the Conference with the Committee appointed by the Government of India to investigate the state of primary education in the centrally administered areas, having been noteworthy during the year under review. But the Conference has also been striving for the spread of education of all kinds; school-visiting committees have been formed in many of the "constituencies," and continuous representations for improvement of educational facilities are being made to provincial Governments and local bodies, which—as will be realized from reference to the annual reports of the Conferences,—have yielded important practical results. The Social Section of the Conference has concerned itself primarily with the issues arising out of the Sarda Act and the Age of Consent Bill; indeed the members of the Conference themselves claim a large share of the credit for the introduction of the Sarda Act, since one of the features of the first meeting of the Conference at Poona in 1926 was the passage of a resolution demanding the introduction of legislation to fix the minimum age of marriage. The Social Section is also doing extremely important work by focussing public attention on such problems as the evils that result from the institution of *purdah*, the circumstances of female industrial employees, the defects of the laws of inheritance, the possibility of introducing legislation for divorce, the reform of prisons, and the necessity for reducing both commercial and religious prostitution. Unquestionably the activities of the Conferences are of great public importance, since it is only as a result of the creation of a more enlightened public opinion that the numerous defects,—according to modern "Western" standards,—in the structure of Indian society can be removed, or that legislation against them can become effective; and voluntary organizations of the type of the All-India Women's Conferences are in a position to foster an improvement in the public attitude in these matters in many ways in which the Government itself is not.

We must now describe such noteworthy events as occurred during the year in connection with the educational institutions for which the Government of India is responsible,—and which were enumerated in the first paragraph of this Chapter. Certain occurrences in connection with the finances of the Aligarh Muslim University were perhaps the most important. Until 1925-26, the grant made to the University by the Government of India amounted to Rs. 1 lakh annually. In 1926, however, the University authorities made representations for additional subventions, and sanction was obtained for increasing the recurring grant to Rs. 1¼ lakhs in 1926-27 and 1927-28,—on the understanding that the extent of the grant to be made in 1928-29, and subsequently, would be reconsidered in 1927-28. In addition, a special non-recurring grant of Rs. 5 lakhs was made, to be payable in two instalments,—one of Rs. 2 lakhs in 1926-27 and the other of Rs. 3 lakhs in 1927-28. When the question of the size of the recurring grant came up for consideration in 1927-28, however, it was found that no decision could be reached, owing to lack of adequate information; but the grant of Rs. 1¼ lakhs which had originally been sanctioned for 1926-27 and 1927-28 was nevertheless provisionally continued during the two subsequent years. In 1929-30 the University authorities submitted to the Government of India a scheme designed to satisfy the most urgent needs of the institution. They estimated that the additional cost of this scheme would be Rs. 36,78,500 non-recurring *plus* an annual sum of Rs. 2,75,000, and made application to the Government for a capital grant of Rs. 15 lakhs together with a permanent recurring annual grant of Rs. 3 lakhs. They also submitted a statement showing the steps that had been taken, or were under contemplation, for introducing reforms on the lines suggested by the committee which the Chancellor of the University, H. H. the Begum of Bhopal, had appointed to enquire into its working. The Government felt satisfied that the University authorities were making serious and earnest efforts to remedy the defects that had been revealed by the Committee's investigations, and also that additional funds really were needed to meet the cost of reconstruction. They therefore sanctioned,—subject to the vote of the Legislative Assembly and the introduction of safeguards to ensure the institution's efficient financial and general administration,—a special supplementary grant of Rs. 41,000 in 1929-30; an additional recurring grant of Rs. 2 lakhs a year in 1930-31 and

subsequent years so as to raise the recurring grant to Rs. 3 lakhs a year permanently; and a non-recurring grant of Rs. 15 lakhs spread over three years,—amounting to Rs. 3 lakhs in 1930-31, and Rs. 6 lakhs in each of the years 1931-32 and 1932-33. In addition to the increased grants from the Government of India, the University was also fortunate in obtaining financial assistance on a generous scale from H. E. H. the Nizam of Hyderabad, who not only increased the recurring annual grant from his State from Rs. 36,000 to Rs. 60,000, but also gave a capital donation of Rs. 10 lakhs.

Largely owing to the improvement in its financial circumstances, the University made rapid progress during the year under review. As a result of the recommendations made in the report of the special Committee appointed to scrutinise the qualifications of the members of the staff, substantial changes were effected in the teaching personnel. The Departments of Islamic Studies and Mathematics were strengthened by the appointments of Dr. F. Krenkow, an Orientalist of established reputation, and Dr. A. Weil, respectively; and the Department of Persian was also improved by the return from leave of Dr. Hadi Hasan. Appointment of Professors in the Departments of Physics, Chemistry and English will be made at the commencement of the new session, and new lectureships have been created in the Departments of History, Philosophy and Education. All the admissions to the University were made by the Admission Committee, which began its work on the 25th of September and finished it on the 30th, after which date no admissions were made. The proportion of day-scholars was reduced to 32 per cent., and still further reductions will have to be made next year. The number of admissions was 461, and including post-graduates the total number of students in the University during 1929-30 was 922. The working and results of the various University examinations during the year were satisfactory. Promotion examinations for the Junior M.A., B.A., M.Sc. and B.Sc. classes have been introduced, and endeavours are being made to organize a proper tutorial system. The M.A. and B.A. Honours classes are already receiving regular tutorial instruction, and although, owing to inadequacy of staff, some Departments are not yet in a position to make such provision for the B.A. Pass students, it is hoped that this defect will soon be remedied. These developments should tend to improve the general intellectual

level of the students considerably and to create a satisfactory academic atmosphere. The University Union continued to be the chief focus of the intellectual activities of the student community and a useful training ground for public life. Besides holding a number of successful meetings, it organized in January an "All-India Debate" which drew competitors from distant parts of the country. The Literary Societies of the University have given ample proof of animation. The distinguished scholars who read papers under their auspices included Professor Morison, of Armstrong College, University of Durham, the Rev. Father Heras, S.J., and Dr. Sir Muhammad Iqbal,—whose profound and stimulating lectures on the Philosophy of Islam were an academic event of great importance. The reorganization of residential life in the University was seriously taken in hand during the year, and a scheme has been drawn up which will make each Hall a self-contained unit and bring the senior members of the staff into closer personal touch with the students. Various members of the staff have been devoting themselves to researches in their respective subjects. Professor Mohammed Habib had in the press an English translation of Amir Khusrau's "*Khuzainul Futuh*" and was shortly to bring out a fresh translation of Farishta's "*Gulshan-i-Ibrahimi.*" Dr. Zafarul Hasan was engaged in the preparation of a work on the "*Philosophy of Kant*", and a book of his entitled "*Monismus Spinozas*" was in the press in Germany. Dr. Hadi Hasan edited the Diwan of "*Falaki*" and his monograph on "*Falaki-i-Shirwani: His Life, Times and Works*" had already been published by the Royal Asiatic Society in London. Maulvi Abdul Aziz Memon continued his labours in the field of Oriental research. The membership of the Lytton Library was made compulsory for all the students of the University; the total number of volumes in the general section was nearly 20,000 and there were 7,423 printed volumes and 621 manuscripts in the Oriental section. The Subhanullah Library, which is the generous gift of Maulvi Subhanullah Khan Saheb, Gorakpur, contains more than 4,000 Oriental books including a considerable proportion of rare and valuable manuscripts; during the year Rs. 12,000 were spent on the purchase of books and periodicals; nevertheless this expenditure has been found inadequate and the Library does not at present satisfy the needs even of the students. The University Training Corps has proved distinctly popular, and although during 1929-30 "C"

Company, of which the Aligarh unit forms a part, could not maintain the first position it had secured in the previous year, it succeeded in winning a number of trophies. If the Aligarh unit can be raised to the status of a full company it should do even better, since it would than be homogeneous and self-contained. During the year the Building Department in the University was particularly active. A new building for the Training College was completed and a number of staff quarters were under construction. The remaining portion of the "*Kachcha* Barracks" was demolished and the Chemistry Laboratory extended. Arrangements were also being made to erect a new building between the Mumtaz and MacDonnel Hostels, which will make the Mohsinul Mulk Hall a compact unit. The Tibbiya College underwent considerable improvements during the period, the laboratory having been provided with X-ray equipment and a collection of pathological specimens, which will enable the students to receive training in the latest methods of diagnosing diseases. The Anatomical Museum was supplied with a large collection of models from Europe covering all the systems of human anatomy, and the Department of Physiology was properly equipped. The Hon'ble Justice Dr. Sir Shah Mohammad Sulaiman acted as temporary Vice-Chancellor of the University until the 20th of October, when he was relieved by Nawab Masood Jung (Dr. Syed Ross Masood), the permanent Vice-Chancellor. Mr. E. A. Horne, M.A., I.E.S., was appointed Pro-Vice-Chancellor on the 7th of July, 1929, and took charge from Mr. M. M. Sharif on the 12th of September.

In last year's Report particulars were given of the financial difficulties in which the Benares Hindu University had been involved, which were not dissimilar to those experienced by Aligarh, and which, also, were to a large extent solved by an augmentation in the sums received or receivable from the Government of India,—which amounted during the period under review to a recurring grant of Rs. 3 lakhs annually *plus* a non-recurring grant of Rs. 15 lakhs spread over the years 1929-30, 1930-31 and 1931-32. During the year the progress of the University was satisfactory. The total number of students on the rolls was 2,533. Some changes were made in the courses of study, Agricultural Botany having been introduced as an independent subject for the M.Sc. Examination, and a Certificate Examination in French and German having been instituted.

Alterations were also effected in connection with the degree in Teaching, and in the faculties of Oriental Learning and Theology, the system of examination in parts (*Khandas*) having been introduced. Mahamahopadhyaya Dr. Ganga Nath Jha, M.A., D. Litt., endowed a prize during the year called the Hamakashi Prize, to be awarded to the student who stands first in Minamsa, and Pandit Mahabir Prasad Dvivedi, the veteran Hindi journalist, endowed three scholarships for poor and deserving students. A donation of Rs. 7,500 was also received from Seth Baboonandan Indar Attarwala for the encouragement of the study of Hindi language and literature, and Seth Rameshwar Das Birla provided the University with Rs. 25,000 for the creation of scholarships for women students in addition to those which had already been endowed by Seth Ghanashyam Das Birla. Some years ago Seth Mulraj Khatau of Bombay and his two nephews, Seths Tricumdas and Gordhandas, gave Rs. 2½ lakhs for founding a Women's College in the University, but there was some delay in giving effect to their wishes, which, however, had the advantage of bringing an addition of Rs. 34,000 to the endowment by way of interest. The terms of the gift were that Rs. 50,000 (*plus* the sum that accrued as interest) should be spent on building the class-rooms, hostel, and so forth, and the balance of Rs. 2 lakhs should be kept intact as an endowment; and that the tuition in the college must be entirely free and the students must not be charged any rent for the rooms in the hostel occupied by them. The buildings which have now been constructed, however, cost more than Rs. 1 lakh. From the interest on the remainder,—amounting to about Rs. 12,000 a year,—the expenses of the College and its hostel are met. Some twenty acres of land within the University are enclosed to form the compound of the Women's College. Two other important gifts to the University require mention. One was the sum of Rs. 50,000 received from Seth Jugal Kishore Birla for the collection of books in different languages on the *Bhagwad-Gita* and for the promotion of its study. It is proposed to have a separate section in the Library called the Gita-Bhavan, where translations and treatises relating to the Gita will be collected; and a committee called the Gita Samiti was formed to draw up schemes to fulfil the object of the donor. The other was the gift from Mr. P. Chowdhury, Barrister-at-Law of Calcutta, of his valuable collections of French books, totalling 1,312 volumes, to the

University Library. The collection is especially rich in historical works of considerable rarity, and *belles lettres*, fiction and memoirs are also well represented. The year was also remarkable for considerable improvement in the University buildings. The construction of the dissection hall for the College of Ayurveda was completed, and the Gymnasium to be called the Shivaji Vyayamashala was nearing completion at the end of the period under review. The Library and Agricultural College buildings were under construction and it was expected that they would be ready by December 1930. Of the research work accomplished, the most important item was probably the thesis presented by Mr. Bhikham Lal Atreya, M.A., Assistant Professor of Philosophy, entitled "*The Philosophy of Yogavasistha*", for the degree of Doctor of Literature, upon which the examiners made a very favourable report. Considerable progress was made during the year in the publication of text-books on Hindi of the Intermediate and University Standard, in accordance with the terms of the grant of Rs. 50,000 made two years ago by Seth Ghanashyam Das Birla. The University Council appointed a Board of Editors and Authors, and entrusted to them the preparation of suitable text-books of the Intermediate standard. Books on civics, history, logic, economics, chemistry, physics, zoology, botany, and mathematics were in the press, and some of them were to be published in July 1930. The Board proposed to take up later the preparation of text-books of the University standard.

The report of the Delhi University Enquiry Committee, appointed by the Government of India in 1927, which outlined a scheme for the University's future development, and which was discussed in the previous issue of this Report, was still under consideration by the Government during the year. There are, therefore, few matters of importance to discuss in respect of the period under review. Applications were put forward by two of the recognized Intermediate Colleges during the year to have their status raised to that of Degree Colleges. The authorities of the Anglo-Arabic Intermediate College were of opinion that there was a demand for a Degree College for the Muhammadan community of Delhi, and that the opening of degree classes would help the development of the College, and stimulate higher education among the Muhammadans of Delhi and the surrounding districts. The University accordingly permitted the

College, with the approval of the Governor-General in Council, to open B.A. classes in October 1929, and to teach certain specified subjects up to the B.A. standard. The Commercial Intermediate College likewise proposed to open degree classes and teach certain commercial subjects, for which hitherto there has been no provision in the University. The proposal was accepted by the University, but had not, at the time of writing, received the assent of the Governor-General in Council. In addition, a demand for a Degree College for women was being raised. There has been a steady increase in the number of women students in the University in recent years, and during 1928-29 more than 10 students were studying in post-intermediate classes. As there is at present only an Intermediate College for women,—the Indraprastha Girls' Intermediate College,—these post-intermediate students had to undertake their studies in men's Colleges. In any case the authorities of the Intermediate College, which is situated in a crowded part of the city, have been for some time considering the possibility of moving it to a more suitable site, and the Government of India has recently agreed to give them the first refusal of Alipur House, in the Civil Lines, as soon as it is vacated, and have granted them a sum of Rs. 60,000 to help them to meet the cost, which will amount to Rs. 1,25,000. This should give the institution a better chance of raising itself in time to the status of a recognized Degree College for women. One other noteworthy event of the year was the institution of B.A. Honours Courses in all subjects under the control of the Faculty of Arts; a feature of these courses is the introduction of a qualifying test in the vernacular as well as in English. Vernacular tests have also been established for most of the other courses under the Faculty.

In previous issues of this Report the changes in the educational services that resulted from the introduction of the Montagu-Chelmsford Reforms have from time to time been referred to. During the year under review, in accordance with the instructions issued to local Governments in March 1927, the Governments of Madras, Bihar and Orissa, and the Central Provinces submitted for the scrutiny of the Government of India the schemes they had drawn up for the organization of the new superior educational services. These were approved generally. The scheme prepared by the Government of Burma was under consideration in consultation with the local Government. Two other events of interest that occurred

during the year deserve mention. The one was the decision made by the Government of India that a special post of Superintendent of Education for Delhi, Ajmer-Merwara, and Central India should be created, in order that the Educational Commissioner with the Government of India might be relieved of the responsibilities which have hitherto devolved on him in this connection; and negotiations for filling the new post were in progress at the end of the period under review. The other was the establishment of a Committee,—as a result of a resolution on the education of girls and women which was put forward by the Rev. Mr. Chatterjee in the Legislature during the period covered by the previous issue of this Report,—to investigate the whole question of primary education in the centrally administered areas. The Committee was constituted in September 1929 under the chairmanship of the Educational Commissioner with the Government of India, and during the year it visited Delhi, Ajmer-Merwara, and the North West Frontier Province, where it examined witnesses and recorded evidence. Its report, however, had not been submitted to the Government of India at the conclusion of the period with which we are dealing.

CHAPTER IX.

The Advancement of Science.

It has been customary in previous issues of this Report to undertake a brief description of the annual achievements of the Archæological Survey, and this year it is proposed to make the experiment of expanding the archæological section into a Chapter in which various other scientific undertakings will also be considered. We have already seen something of the work which is taking place under Government auspices in Agricultural and Veterinary Research, Forestry, Meteorology, and Medicine, but apart from these sciences, and Archæology, it seems desirable in a work of this kind to give the reader an idea of some of the other scientific activities which are fostered by the Government, and in addition of a few of the outstanding recent achievements of independent scientific research in the chief academic centres of India.

So much for the objects and structure of this Chapter. Let us now proceed to our discussion of the Indian Archæology. The Archæological Survey was first established in 1862, but its real history dates from 40 years later, when its activities were drastically reorganized and enlivened under Lord Curzon's administration. Since then the extent of its accomplishment has been remarkable. Not only has it undertaken the investigation, preservation, and repair of a very large number of the splendid monuments and buildings dating back to the III century B.C. which India was known to possess,—and which was the function for which it was primarily constituted,—but it has also achieved some epoch-making triumphs in the field of pure research, which have thrown a flood of unexpected light upon the early history of India and the origins of civilization as a whole. The discovery in 1923-24 of material demonstrating that there had been, in the North-Western portion of the country at any rate, a hitherto entirely unsuspected and astonishingly elaborate civilization as long ago as 4,000 B.C., aroused intense interest throughout the scientific world, and may truly be said to be one of the most suggestive and important of the many fine achievements of modern archæology.

Although no sensational discoveries were made by the Department during the year under review, further survey of the prehistoric sites in India yielded striking evidence of their widespread distri-

bution and also of the fact that they are not all attributable to one civilization. Since the original discovery of the chalcolithic culture in the Indus basin, several attempts have been made to discover evidences for its existence in adjacent regions. In 1925 the Superintendent of the Survey in the Frontier Circle investigated a part of the Northern area of the Kalat State, and in 1926-27 Sir Aurel Stein toured through Waziristan and Northern Baluchistan, and extended his researches to Southern Baluchistan in 1927-28, with the result that a large number of prehistoric sites have been traced and recorded in the Memoirs of the Survey. But very little was known of similar sites in the Indus Basin itself,—excepting, of course, Mohenjodaro and Harappa,—and it was therefore felt desirable that the survey of that area should be undertaken during the cold weather of 1929-30. The task was entrusted to Mr. N. G. Majumdar, Assistant Superintendent for Exploration, who started his reconnaissance in the Deltaic region and carried it Northward as far as the Sukkur District. His journey extended over 1,500 miles, in the course of which more than a hundred mounds were examined. At three places only did he find material of prehistoric interest, namely at Tharro Hill near Gujo on the road from Karachi to Tatta; at Amri near the station of that name on the Rohri-Kotri Section of the North-Western Railway; and at Chanhudaro near the village of Jamal Kiriyo, between Sakrand and Nawabshah. The Tharro Hill site was already known to the Department, having yielded a number of chert flakes. At Chanhudaro his investigations clearly established the prehistoric character of the mounds, which yielded remains of brick buildings and a masonry wall, painted pottery, beads, copper and chert implements, terracotta figurines, and three square seals of paste,—all of which closely resemble the antiquities recovered at Mohenjodaro, with which Chanhudaro must therefore be contemporary. At Amri a number of chert flakes lying at the base of one of the mounds suggested the existence of interesting prehistoric remains. Trial excavations brought to light the remains of stone walls of two strata of occupation. The upper stratum yielded painted pottery and other relics akin to those from Mohenjodaro, while from the lower stratum embedded in the silt of the Indus was recovered a peculiar type of thin painted ware of entirely different fabric and ornament, and resembling pottery from Baluchistan and Seistan. This stratification brings out the remarkable fact that many of the sites in Baluchistan and Seistan must

have been antecedent to the Indus valley culture, and that in the Indus Valley itself the earliest civilization is not that represented at Mohenjodaro and Harappa.

An interesting discovery was also made in the Punjab during the year. At Kotla Nihang near Rupar in the Ambala District, four trial trenches in a large natural mound revealed chert weights, pottery, heartshaped terracottas and bricks, indistinguishable from those recovered at Harappa and Mohenjodaro. The structural remains were scanty, and the site could never have been very important, but the presence of traces of the Indus valley civilization so far to the East, and relatively close to the water-shed of the Sutlej and Jumna, renders it highly improbable that this culture was confined to the Indus Valley. There can in fact be hardly a doubt that it extended into the Ganges Basin, and it is hoped that definite proofs of this may ultimately be discovered.

At Mohenjodaro itself, the excavations which were described in our Report last year have continued, and an area of some 17,000 square yards has now been cleared to a depth of about 18 feet below the surface, while in parts deeper digging has almost reached water level. Here,—as also at Taxila,—the building construction improves as the lower levels are reached, and the earlier periods would seem to have been Mohenjodaro's palmy days. As might be anticipated, the excavation of the lower strata has not yielded so rich a harvest of antiquities as that of the superficial levels, but those which have been recovered are of considerable interest, and moreover prove that the art of the seal cutter and the technique of other industries was of a very high order during the earlier periods of occupation. This deep digging has exposed further portions of the important street which we mentioned last year, and which must have been one of the main arteries of the city. It averages 32 feet in width and has been traced for about a third of a mile, and an idea of its importance may be obtained from the plate reproduced opposite, where modern bullock carts and foot passengers are seen in it and show that it afforded ample room for more than two lines of traffic. In the course of excavating this street to the level shown in the plate, five clearly defined periods of occupation were passed through, each with its own drainage system. At one period an attempt had evidently been made to provide a better surface for the roadway than mere beaten earth, by means of a layer of broken bricks and small potsherds cemented together with clay,

which proved to be so hard that it could only be removed with difficulty by the excavators. It would seem that it was only during the later period that the doors of the houses on either side opened on to the main street; in earlier days all the houses were entered from narrow lanes parallel with or leading off from it. Unless there were windows high up in the walls both *façades* of this street must have been somewhat uninteresting, but the walls have been raised and added to so frequently that all evidence of windows or balconies, if they ever existed, has entirely disappeared.

At Harappa the excavations and investigations described in previous years have continued. One of the low-lying portions of the site has now yielded abundant skeletal remains; in one small area alone,—10 by 13 feet wide and from 4 to 6 feet below the surface,—no less than 20 skulls and other human and animal remains were discovered, together with vessels of various forms which were apparently funerary deposits. Besides these seemingly complete burials in open ground, 110 burial jars were recovered on another part of the site, similar to those which we briefly mentioned in last year's Report. All these jars were originally covered with inverted bowls, flasks, handled lids or large potsherds. Detailed examination of their contents has yet to be undertaken, but the results are likely to be of great value to the anthropologist. So far, only 27 of these numerous vessels have been examined and were found to contain skulls and human bones, and are apparently fractional burials. The decoration on their surfaces, although by no means elaborate, is extremely interesting, and consists chiefly of chevrons, wavy lines, and crude representations of peacocks, deer, goats, birds, and sometimes human figures. Peculiarly significant are the paintings on one of the jars whereon are depicted three flying peacocks alternating with stars, and with a human figure placed horizontally within the body of each bird. This suggests that the peacock may have been believed to carry the ethereal body of the dead to the Abode of Bliss, and possibly accounts for the strong superstitious feeling for this bird which is still so marked in many parts of India. In one of the trenches a second stratum of burials has been exposed revealing both complete and fractional burials together with funerary pottery, which may prove to be of considerable cultural importance, since they are entirely different from the pot burials just described. In this area traces of walls were met with, although generally speaking the structural remains at

Harappa are scanty; recent clearance in another part of the site has moreover disclosed the foundations of a really large building, but until the remains of later structures have been removed it cannot of course be properly investigated. Of the small antiquities discovered during the year the most notable were numerous pictographic seals and sealings, copper tools and arms, objects of faience, and pottery of very varied types.

We may now turn to consider the work of the Department in connection with sites and monuments that fall within the ordinary historical periods. In recent years we have devoted a considerable amount of space to a description of the archæological work at Taxila and the excavations of the Scytho-Parthian city of Sirkap. Of the various discoveries made during the period now under review, the most striking were several small hoards of jewellery found by Sir John Marshall, consisting of bangles, bracelets, finger-rings, rosettes, a hair pin, and two interesting little reliefs of Eros and the winged Aphrodite. All these objects are gold and many are encrusted with coloured paste or gems,—turquoise, garnet, amber, crystal, and opaque black and white stones. Along with them were a few articles of silver,—including two small dishes bearing brief inscription in Kharoshthi, a bowl and flask, four anklets, and a dozen coins belonging to the close of the Parthian or beginning of the Kushan epoch. In design and technique they resemble the jewellery found in previous seasons at Sirkap, but the pieces unearthed this year are the first in which the decoration of encrusted stones and paste was in a relatively good state of preservation; they thus enable us to form a much clearer idea of the original beauty of this type of work, in which an oriental richness of colouring is combined with forms which in some examples are distinctly Hellenic. Two of the pieces have a peculiar interest of their own, one because it places beyond question the genuineness of a similar medallion purchased some years ago from a dealer, and the other, because it closely resembles certain ear-pendants—which had also been purchased and which were stolen from the Lahore Museum to which they had been temporarily loaned. The jewellery in the Taxila Museum now forms by far the finest collection in India. A few pieces from the Bhir Mound belong to the Mauryan period, but the bulk of it is referable to the beginning of the Kushan epoch,—that is, to about the end of the I century A.D. Evidently Taxila must have been visited at this time by some cata-

strophe,—probably a hostile invasion,—which caused the inhabitants to hide away their valuables in haste. Nothing else would seem to account for the presence of so many buried treasures; for of the few houses of this period that have survived there is hardly one where some deposit of value has not been unearthed, whereas the buildings of the Scytho-Parthian and lower strata, though far more numerous, have yielded scarcely any gold or silver objects. With the deepening of the excavations in Sirkap it has become increasingly clear that the streets in the earlier cities were in the same alignment as those of the latter, and that the unusually symmetrical planning of this city must be ascribed at least to the time of the Bactrian Greeks. Moreover, as the spade goes deeper, building construction is seen to improve, the remains of the third and fourth strata being distinctly superior to those of the second, although less massive than those of the fifth. Altogether six well-defined strata have now been brought to light within a space of 20 feet from the surface. Such an accumulation of successive settlements might well be supposed to represent long centuries of growth and decay; actually, however, it is now virtually certain that the first of these cities is no older than the IV century B.C. and the last no later than the I century A.D.

The excavations of the large Monastery of Paharpur, in the Rajshahi District of Bengal, which have been in progress for some time, were limited during the year to a thorough examination of the foundations of the main chamber that once crowned the topmost terrace of the structure, and to the clearance of the double chambers forming the Northern and Western sides of the monastic quadrangle. Over a hundred cells have been exposed and, except for the Southern and South-Eastern portions of the quadrangle, the whole *vihara*, the largest ever discovered in India, is now open to view. It is hoped that by next year the excavation of this most interesting monastery will have been completed. The antiquities recovered this year were scanty, a few stone and bronze statuettes and an inscribed pillar with a XII century epigraph being the most noteworthy. Some progress can also be reported concerning the exploration of the extensive and important Buddhist site at Nalanda, in Bihar and Orissa. The lower levels of occupation of Monastery VII were excavated, and Monastery VIII, which consists of 36 cells and a large *chaitya* in the middle of an extensive courtyard, was cleared. Apart from the structural remains, the most interesting finds were

eight beautiful images of bronze and stone. Further excavation of the Nagarjunikonda site in the Guntur District of the Madras Presidency resulted in the recovery of a number of beautiful and interesting bas-reliefs of the Amaravati style. Excavations in Burma were undertaken at Halin in the Shwebo District, at Old Prome, and Pagan, but save for an inscription in Pyu and a carved stone decorated with figures, presumably of Pyu date, very little of importance was recovered. A site in private ownership near Bassein yielded an inscription in Talaing and Pali of the XV-XVI century.

The numerous antiquities recovered by excavation cannot as a matter of course be straightway placed in archæological museums, for they are frequently found to be much altered and decomposed owing to having lain buried so long, and consequently require elaborate treatment before they can be safely exposed to the air. Formerly such treatment was carried out in the museums, but it is now entrusted to the Department's Archæological Chemist. During the year under review 980 antiquities of metal, faience, steatite, ivory, birch bark, and so forth were treated under his direction in the departmental laboratories, and he and Dr. Guha of the Zoological Survey have been responsible for the preservation of the skeletal remains recovered at the prehistoric cemeteries at Harappa. His advice has also been sought by departmental officers in such problems connected with the preservation of ancient monuments as the destruction of vegetation, the elimination of paint, dirt, whitewash and mildew, the control of bees and other insects, and the causes of the decay of stone. He also examined specimens of glaze for the Archæological Department of the Government of Ceylon, and at the request of the Rampur Durbar was deputed to advise on the preservation of a valuable collection of manuscripts and paintings in the State Library. The nature and composition of the metals, alloys, ceramic materials, mortars, pigments, medicines, and other objects recovered by excavation at Mohenjodaro and Harappa, have also been subject to his investigation, and the results throw considerable light on the technical processes of the Indus civilization.

With the object of making its museums more attractive centres of research and education, special attention has recently been devoted by the Department to the proper display of its collections. The opening and arrangement of the Taxila Museum was described in our Report last year, and as we have seen it now contains an extraordinarily fine collection of antique jewellery. In the Central

Asian Antiquities Museum at New Delhi the paintings on silk and other antiquities from Central Asia have now been exhibited along with prehistoric pottery from Baluchistan. At Sarnath, as the result of the frequent excavations of the site, the Museum had become overcrowded, and the exhibits illustrating the history of plastic art in Eastern India from the III century B.C. to the XIII century A.D. had fallen out of chronological sequence. All ill-preserved or artistically inferior specimens that are of interest to students only have therefore been relegated to a private hall, and the main public galleries have been devoted exclusively to the exhibition in proper order of the more obviously instructive and important objects. The new arrangement is well shown in the plate reproduced opposite. The central hall and the verandah to the South now contain some of the best-known masterpieces of Indian art;—magnificent Mauryan sculptures such as the Asoka Lion Capital and portrait heads; the colossal Bodhisattva with its umbrella as a representative of the Mathura School; fine examples of Sunga decorative art; and the choicest productions of the local Gupta School, including superb images of the Buddha and exquisitively carved architectural pieces.

The Epigraphical Section of the Survey has not only examined inscriptions discovered by its own staff, but also 1,212 Kanarese inscriptions belonging to the Bombay Karnatak and Bellary which were transferred from the office of the Western Circle, and in addition various inscriptions and seals received from the Archæological Commissioner of Ceylon and from private persons. Three parts of the "*Epigraphia Indica*" were issued during the year, and material for five more parts sent to the Press. In reporting last year upon the newly discovered rock Edicts of Asoka at Yerragudi, we remarked that Edicts VI and XII had not been traced. Subsequent research by the Epigraphical staff has, however, brought them to light, and the Yerragudi recension is now complete, and the inscriptions will shortly be published. Besides the "*Epigraphia Indica*" the Department has been responsible for the issue during the year of a large number of publications on exploration, monuments, architecture and numismatics, of which the most important was undoubtedly Sir Aurel Stein's great work "*Innermost Asia*" in which the results of his last expedition to Central Asia are described. The authoritative account of the excavations at Mohenjodaro, which, as we explained last year, is being compiled by Sir John Marshall, and

which has been eagerly awaited, is expected to go to the press in 1930.

We may appropriately bring this brief section to a conclusion by giving an indication of the buildings and monuments of ordinary historical interest upon which the attention of the Department has been chiefly concentrated during the year. As we have already mentioned, this work, although far less spectacular than what we have hitherto been describing, is the main function of the Department, occupying the greater part of the time of its staff and absorbing the bulk of the funds put at its disposal by the Government of India. Some idea of the extent of these activities can be gauged from the fact that the number of monuments of archaeological importance for which it has been made responsible throughout the length and breadth of the country is well over 3,000. During the year under review its attentions have been distributed mainly as follows:—In the Punjab, the gardens and courtyards of the Lahore Fort, and the Baijnath temple in the Kangra District; in Delhi Province, Safdarjang's tomb, Purana Qila, Ghaziud-Din's tomb, Chausath Khamba, and Bijai Mandal; in the United Provinces, the fort and Taj Mahal at Agra, Akbar's tomb at Sikandra, the so-called "Mint" at Fatehpur Sikri, the Id Gah at Rapri, the mosque and tomb of Makhdum Jahanian, the Gupta temple at Deogarh, and the Lakhamandal temple in the Dehra Dun District; in the Bombay Presidency, the Faria Bag palace at Ahmednagar, the Shanwar Wada at Poona, the Mansar tank at Viramgam, Siddi Sayyad's masjid at Ahmedabad, the Mahadeva temple at Kankanpur, the Gol Gumbaz and Sikandar Adil Shah's tomb at Bijapur, the Sri Dattatraya temple at Chattarki, the Tarakeswar temple at Hangal, and the tombs of the Faruqi Kings at Thalner; in the Central Circle, the monasteries and stupas of Nalanda, Man Singh's palace at Rohtas, the ancient walls at Rajagriha, the city walls and gateways at Ellichpur, and the Siva temples at Dhotra and Sindkhed Raja; in the Eastern Circle, the excavated temple at Paharpur, the XIV Century mosque at Zafar Khan Gazi at Tribeni, the Dah Parbatiya temple at Tezpur, the palace of the Ahom kings at Garhgaon and the Siva temple at Nigriting; in the Madras Presidency, the Asoka Rock inscriptions at Jaugada, Ganjam Fort, the Dutch cemetery at Negapatam, and the Choutar's Palace at Mudabidri; in Burma, the Payathonzu temple at Minnanthu, the Lokananda pagoda at Thiyipyitsaya, the

fort wall of Mandalay, the tomb of King Bodawpaya at Amarapura, and the buildings on the palace platform at Mandalay. In addition a certain amount of work has been undertaken for the Indian States of Central India and Rajputana, which, although they do not come within the scope of the Ancient Monuments Preservation Act, are tending increasingly to seek the advice and assistance of the Department upon the many and magnificent objects of archæological interest which they contain. During the year special attention was directed to the Jaya Stambha at Chitor, which was examined by an expert committee, who urged the necessity of prompt measures to preserve it from further movement and decay. Inspections have also been made of the old palace at Datia, which is probably the finest example of early XVII century domestic architecture in India,—as will be realized to some extent from the photograph reproduced opposite,—and of the Raisen Fort which the Bhopal Durbar proposed to have surveyed and preserved.

After Archæology, the geographical work undertaken and achieved by the Survey of India next claims our attention. The primary function of the Department is the responsibility for all topographical surveys and explorations, and the preparation and maintenance of geographical maps of the greater part of Southern Asia. In the past the Department has also carried out the original large scale revenue surveys for most of India, and was still conducting this work for Central and Eastern India and Burma up to 1905, when all revenue surveys were handed over to the Provinces concerned. It was hoped to complete this series by 1930, but owing to retrenchment and the war little more than half has been done up to date, in spite of the reduction of the scale of survey for less important areas. Thus, although new surveys covering an area about equal to that of England are carried out every year, the maps of half the country are still very old and only kept up to date roughly by means of rather perfunctory information supplied by local officials; the old maps, also, have an error of about two miles in geographical position, being based on a longitude of Madras determined in 1815.

Boundary surveys and records of international, state, and provincial frontiers have always formed an important item of the Department's topographical work; and in recent years there has been considerable progress in the preparation of Guide Maps for import-

ant cities and military stations, where the 1-inch=1 mile scale is quite inadequate.

Another extremely important aspect of the Survey's functions is its geodetic work, which includes the construction of the main trigonometrical framework, extending in some cases far beyond the frontiers of India, and of control net-works of precise levelling based on tidal observations; tidal predictions and the publication of tide tables for nearly 40 ports between Suez and Singapore; the magnetic survey; astronomical, seismographic, and meteorological observations at Dehra Dun; and investigations of the fundamental problems of geodesy, for which India, being placed between the greatest highlands of the world and a deep ocean extending to the Antarctic, is a uniquely favourable site. The geodetic investigations undertaken in India have disclosed by far the largest known anomalies in the gravitational attraction of the earth's crust, and these, together with the facts provided by the trigonometrical survey, have afforded an invaluable basis for estimates of the size and shape of the earth. On these terrestrial measurements of course depend many of the fundamental calculations of astronomy and physics.

In addition to its topographical and geodetic work, which is financed from Central revenues, the Department is steadily developing the policy of aiding local surveys in various ways, on payment by those concerned. These miscellaneous operations include all forest and cantonment surveys; many riverain, irrigation, railway and city surveys, and surveys of tea gardens, mining areas and so forth. Administrative assistance is also given in aid of the revenue surveys of various Provinces and States. The Printing Offices of the Survey do much useful work for other Government Departments, especially in the preparation of maps and illustrations; and the Mathematical Instrument Office gives valuable aid to Government institutions and private bodies by maintaining a high standard of instrumental equipment, especially in connection with optical work, and by the manufacture and repair of high-class instruments which would otherwise have to be acquired from overseas. The Department is also responsible for all survey operations required by the Army, and has been rapidly developing measures to meet the greatly increasing complexity of modern military requirements, especially in connection with aerial survey work.

We may now summarize the activities of the Survey during the latest period for which detailed information is available, namely the

year 1928-29. As regards administration, the whole of India and Burma is sub-divided for survey purposes into five Circles, and during the year under review the officer in charge of the organization as a whole was Brigadier R. H. Thomas, D.S.O., who succeeded Brigadier E. A. Tandy as Surveyor-General in December 1928. The area surveyed during the year amounted to almost exactly the same total as in 1927-28, namely, a round figure of 48,000 square miles. The more outstanding features of this work include the survey by permission of the Bhutanese Durbar of 790 square miles of previously unexplored country in Bhutan adjoining British territory; the completion of the survey of Chitral—an undertaking which required considerable organization and enterprise, and during which officers with no previous experience of high climbing worked in mountains and glaciated areas ranging up to over 18,000 feet; cadastral surveys in the Dera Ismail Khan District of the North-West Frontier Province; boundary surveys in the Gurgaon District of the Punjab; a large scale survey of Kaliana Tank in Jodhpur State; boundary surveys in the Bulandshahr District, and traversing for air surveys in the Sitapur and Bahraich districts of the United Provinces; a city survey of Benares; and estate surveys in the Coimbatore, Malabar, Nilgiri and Kadur districts of the Madras Presidency and in Travancore State. In addition, the normal programme of forest, riverain and cantonment surveys was carried on, and also the work in connection with the Sutlej Valley Irrigation project and the Lloyd Barrage in Sind, which was referred to in our Report last year.

Two interesting feats of exploration occurred during the year in the Karakoram Range, for neither of which the Survey was actually responsible, but in connection with which it nevertheless provided some assistance. The first expedition was led by His Royal Highness the Duke of Spoleto, and crossed the Muztagh Pass to the Sarpo Laggo glacier and followed up the Shaksgam valley to the Kyagar glacier, discovered by the survey of India in 1926. A stereographic survey was made of the Baltoro glacier and various meteorological, magnetic and pendulum observations were carried out, both on the glacier and in Baltistan. The Duke visited Dehra Dun in March 1929 and compared his pendulum and magnetic instruments with those of the Survey. The other expedition was that undertaken by the Dutch explorer Mr. P. C. Visser, who was accompanied by Khan Sahib Afraz Gul Khan, Extra Assistant Superintendent in

the Survey. The party successfully explored the great tributaries of the lower Siachen Glacier, and established the fact that two long glaciers flow North West from the head of the Chong-Kumdan and Mamostong glaciers, the first of them being approximately 20 miles long. Almost the whole of the unexplored region of the Upper Nubra valley was surveyed by Mr. Visser and the Khan Sahib. Tributaries of the Upper Shyok below Saser Brangsa were next explored, after which the expedition examined and surveyed the country East of the Karakoram pass. At the end of September Khan Sahib Afraz Gul Khan was on his way back to Leh, having surveyed approximately 13,000 square miles in this area.

The Himalayan Club, to which reference was made in last year's Report, published its first Journal in April, which contained a summary of Central Asian and Himalayan Exploration during the previous year and many articles of interest to the Department.

The geodetic work of the Survey progressed satisfactorily during the year, though there are few outstanding events to record. At Dehra Dun Observatory the Bordeaux and Rugby wireless time signals were regularly received by day and occasionally by night, and latitude was observed once or twice a month with the Zenith telescope; complete meteorological observations were made daily and the results sent to the Meteorological Department; continuous record of the three magnetic elements was maintained, and also the seismological observations,—19 major and 77 minor earthquakes having been recorded during the year on the Omori Seismograph; and gravity was measured monthly with brass pendulums. Gravity observations were also undertaken from time to time at 20 other stations throughout the rest of India. The Tidal Observatories at Madras, Bassein, Rangoon, and Kidderpore were inspected during the year, the preparation of the Tide Tables for Basra and the Indian ports for the year 1930 was completed, and the Tidal Curves for 1931 were run off the Tide predicting machine. Primary triangulations were carried out on the Chittagong series between Chittagong and Falam in Burma, and also in the Mong Hsal series between Yamethin in Burma and the Siamese border. Out of the 15,900 miles of high precision levelling required for the new geodetic level-net of India, 735 miles were completed during the year, making a total of 7,837 miles completed up to date; in addition 1,470 miles of single levelling on the high precision system was carried out in Northern and Western India. Secondary levelling

was carried out for the East Indian Railway and the Governments of the Punjab and Burma, to the extent of 609, 225, and 96 miles respectively. In addition a considerable amount of tertiary levelling was done. Numerous computations were made during the year in connection with the Lambert grid, on which surveys would be carried out in time of war.

The publication of maps by the Survey has continued satisfactorily during the year, no less than 710 departmental maps, including reprints and new editions, having been issued. In addition, numerous maps and plans have been prepared for the Army, local Governments, the Railways, and other organizations. Lastly we may mention the work undertaken by the Survey in connection with the manufacture and repair of scientific instruments. Large numbers of lenses, prisms, colour glasses for telescopes and compasses, diaphragms for theodolites, graticules for binoculars and dial-sights, and other such articles, continued to be manufactured by the Department, and would otherwise have had to be imported from abroad; and in addition special scientific apparatus of various kinds was manufactured for a number of official and other organizations such as the Punjab Irrigation Department, the Bengal Pilot Service, and the Calcutta School of Tropical Medicine. A considerable amount of repair work was also undertaken for various institutions on such instruments as microscopes, binoculars, telescopes, prismatic compasses, range-finders and sight dials. The total value of the manufactures and repairs performed by the Instrument Office was about the same as in the previous year.

We will now turn to consider the functions and achievements of the Geological Survey. Prior to 1851, there was no official Geological Survey in India, although the Government had already employed geologists for special purposes from time to time. But in that year Dr. Thomas Oldham, of the Geological Survey of Ireland, was brought out to organize a Geological Survey in India, and this has been in continuous operation ever since. Within a few years of its foundation, the strength of the Department's staff was 12, and this number has been gradually increased until the present total strength of the gazetted scientific staff is 36,—a number which in view of the vast tracts of country to be investigated, and the richness of India's mineral deposits, must be regarded as small; at any rate it is far from comparing in size with the staff employed for surveys of equivalent areas in Europe and North America. The

principal justification for the maintenance of an official Geological Survey by the State is that it stimulates the exploitation of the country's mineral resources, since systematic geological investigation reveals the conditions under which minerals of economic value occur, and thus renders it possible for prospecting operations to be conducted by private enterprise upon an intelligent basis. But apart from the purely utilitarian benefits to be derived from it, the establishment of a Geological Survey may be considered to be well justified from the broader cultural and intellectual point of view, since it is obviously desirable that a self-respecting country should accumulate as much scientific information as possible concerning the composition and structure of the foundations upon which everything else in its territories is supported.

In order to provide scientists and the general public with accurate information concerning the systematic researches which it has conducted during the 79 years that have elapsed since its foundation, the Department undertakes the issue of three distinct scientific publications at regular intervals. The first of them, known as the "*Memoirs of the Geological Survey of India*", was started in 1859 and has now reached Vol. LVIII; it contains comprehensive studies of the geology of particular tracts of country and accounts of the resources of India in minerals, such as coal, manganese-ore and petroleum. The second series of publications is the "*Palæontologia Indica*" which was instituted for the description of the collections of fossils obtained during the operations of the Survey. These Collections are sent to those who specialize in the study of the various groups of animals and plants concerned, the specimens described being treated as type fossils and stored in a special colllection for reference purposes. The "*Palæontologia Indica*" has been in existence since 1861, and is handsomely illustrated. The third series of volumes, known as the "*Records of the Geological Survey of India*", was first issued in 1868 and now consists of sixty-three volumes. In addition to these three major publications several special works, such as "*A Manual of the Geology of India*", a "*Bibliography of Indian Geology and Physical Geography*", and various guides to the geological collections in the Indian Museum have been issued by the Department from time to time.

Another function of the Department is the assistance it has rendered to geological education in India for many years by furnish-

ing lecturers to various colleges and institutions. At present lecturers are provided at the Presidency College, Calcutta, the Bengal Engineering College, Sibpur, and the Forest Research Institute and College, Dehra Dun, whilst the Director of the Department is *ex-officio* President of the governing body of the Indian School of Mines.

The headquarters of the Geological Survey have been established in Calcutta, partly because of the association of the Department with the Indian Museum, within which the departmental collections are housed, and partly because Calcutta is in any case a convenient centre for geological operations, since several of the more important mineral fields of India are near it. The officers of the Department disperse for field work to all parts of India at the beginning of the cold weather, but return for recess to Calcutta. A sub-office of the Survey is maintained in Rangoon, and in addition a resident geologist from the Department is stationed at Yenangyaung as Technical Adviser to the Warden of the Oilfields in Burma, and provides him with help in supervising the operations of the oil companies, and ensuring that the most economical methods are used in the production of oil and gas in order that the life of these valuable mineral assets may be maintained as long as possible.

During 1929, the Department was engaged in systematic field work along the North-West Frontier and in the Simla Himalayas, in Rajputana, the Central Provinces, Bihar and Orissa, the Madras Presidency, and Burma. In addition, a special investigation into the coal resources of India, which has been in progress for several years, was brought nearly to completion and the issue of special memoirs thereon was commenced. Besides systematic geological surveys such as these, which together with special researches into the mode of occurrence of particular minerals form the main work of the Department, help is frequently given by members of the scientific staff upon the geological aspects of the various engineering problems that arise in India, such as the stability of hill-slopes, the effects of earthquakes, and,—most important of all,—the provision of water-supplies, either by means of reservoirs or by boring and the construction of artesian wells. Laboratory studies of particular problems are also undertaken from time to time; as an example, mention may be made of a study now approaching completion of the relationship between the specific gravity of Indian

coals and certain of their other properties, and an interesting investigation was also made not long ago into the suitability of the froth flotation process for the improvement of Indian coals.

In order that the problems arising from the development of the country's mineral industries may be fully understood, knowledge is necessary concerning the rate of production of the various minerals. For this purpose the Department undertakes the annual publication of a review of mineral production in India for the preceding year; in addition, a consolidated review is published every five years in which a more elaborate review of the progress of the mineral industries of India is undertaken.

The operations of the Department result in the collection of large numbers of specimens of rocks, minerals and fossils, which are necessary for a proper study of the geology of India. These specimens are housed in the Indian Museum, where a selection of them is exhibited with suitable labels for the benefit of the students and the officers of the Department, as well as of the general public.

The Botanical Survey next claims our attention. The origin of systematized attempts to investigate the flora of India may be traced back to 1685, when Van Rheede was Governor of the Dutch possessions in Malabar; and botanical research has been continually fostered by the British administration since the appointment of Koenig as Government Botanist in Madras in 1778. But the most important centre for work in pure Botany has been not Madras but Calcutta, where the Royal Botanic Garden was started in 1786, as a result of the successful endeavours of Kyd to convince the Directors of the East India Company that organized botanical investigations were capable of yielding results of definite economic value.

As now constituted, the Botanical Survey is under the control of a Director who is also Superintendent of the Royal Botanic Gardens. In addition, the Director is responsible for supervising the production and manufacture of quinine under State auspices in Bengal and Burma, and the transference of *Cinchona* products to the Government of India's area of distribution in Upper India. Apart from the Director, the Senior Staff of the Survey consists of two officers who are employed at headquarters on systematic work, and a curator at the Indian Museum who is in charge of the Industrial Section.

The existence of the Botanical Survey, like that of the Geological Survey, has both a cultural and an economic justification. On general grounds it is obvious that a progressive Government should acquaint itself with the physical facts of the area it administers, and although, apart from its *Cinchona* operations, the activities of the Survey cannot be said to have much immediate economic applicability,—consisting as they do of investigations and researches into the systematics, physiology, ecology, and histology of plant life,—the work accomplished in pure botany at the Royal Botanic Garden during the last century and a half has exercised a profound and far-reaching influence upon the development of Agricultural Science and Forestry in India. The exchanges of information and of personnel between the botanical establishment at Calcutta and the Agricultural and Forest Departments have throughout been of the greatest possible value to all concerned, and even now, despite the progressive differentiation and specialization which is of necessity taking place, the relations of the Survey with these two organizations remain close and intimate. In addition, the Survey constitutes a rallying point for that large body both of official and non-official botanists who are adding to knowledge for its own sake; its rich library and magnificent collections render its co-operation necessary to the research-worker in a variety of ways, and it performs a valuable service to the botanical free-lance by assisting in the arrangement and publication of the results of his labours.

During the year 1928-29, a more stable state of affairs both as regards personnel and finances enabled the Survey to achieve some substantial and important results. Two members of the staff were out on tour, and brought back specimens which have added considerably to the interest of the collections both in the Gardens and in the Museum. Mr. Narayanaswami's expedition to the region North of the Kallar river,—despite difficulties of weather, which necessitated alterations in the route originally decided upon,—resulted in the addition of a number of valuable specimens to the Department's group of collections from North Travancore. A large part of the country traversed had not previously been botanically surveyed. Altogether about 1,000 well-preserved specimens were obtained, and some of them have been despatched to Kew Gardens for investigation in connection with the work on the flora of Madras which is at present in progress there. The expedition to the Punjab and Kashmir hills, undertaken by the Curator, resulted in the

collection of more than 500 specimens of which 400 will be exhibited in the Gallery. The more important of these are examples of walnut wood carving, *papier maché* work, and a complete exhibit of the processes of match manufacture from indigenous woods such as *Bombax melabaricum*, *Populus nigra*, and *Pinus excelsa*, which shows all stages of manufacture from the raw material to the finished splints and match boxes; a number of agricultural products, such as oilseeds, were also collected, some samples of crude drugs from the Kashmir hills, and a variety of other specimens of medicinal and economic plants.

One of the subsidiary functions of the Survey is to give information concerning the sources whence plants of economic importance and products thereof may be obtained, and during the year under review a considerable number of enquiries of this kind, both from India and abroad, were satisfactorily dealt with. In addition, numerous plants and other objects of vegetable origin were identified on behalf of Government Departments and the general public.

A comprehensive exhibit of *Cinchona* and its products, demonstrating all the details of the manufacture of quinine and other salts, was presented during the year to the Ross Experimental station for Malaria Survey at Karnal; and another set of exhibits of *Cinchona* and its products was placed on view to the public in the Health Welfare Exhibition held in Calcutta in March 1929. A number of specimens of medicinal and industrial value were presented to the Bengal Allen Medical College and to the Registrar of Calcutta University, for their Commerce Department Museum.

Some description of the arrangements with regard to the production and manufacture of quinine in India is desirable, since, as has already been explained, the Director of the Botanical Survey has certain functions in connection with it. *Cinchona* plantations are maintained by the Government of Bengal at Mungpoo and Munsong in the District of Darjeeling, by the Government of Madras in the Nilgiris and the Anamalais, and by the Government of India at Mergui in Burma. The bark of the trees grown on these plantations, as well as the bark obtained from Java by the Government of India, is converted into quinine and its by-products at the factories at Mungpoo and Naduvattam, which are maintained by the Governments of Bengal and Madras respectively. During the year 1928-29 the Government of India imported 214,571 lbs. of

bark from Java, while the quantity harvested at their own plantations in Burma amounted to 109,588 lbs. The total quantity of bark belonging to the Government of India at the Mungpoo factory, including the stock lying over from previous years, was 684,209 lbs. (581,768 lbs. from Java and 102,441 lbs. from Burma), of which 140,277 lbs. were worked during 1928-29, yielding 5,417 lbs. of quinine sulphate and 3,130 lbs. of *Cinchona* febrifuge powder. At the Naduvattam factory in the Madras Presidency where all the bark belonging to the Government of India is Java bark, the quantity worked was 78,506 lbs., which yielded 5,048 lbs. of quinine sulphate and 1,350 lbs. of *Cinchona* febrifuge. The quantity of bark harvested from the two *Cinchona* plantations belonging to the Government of Bengal was 1,041,827 lbs. The quantity of dried Bengal bark used in the Mungpoo factory was 918,071 lbs., from which 35,951 lbs. of quinine sulphate, 17,371 lbs. of *Cinchona* febrifuge, and 1,126 lbs. of other quinine salts were manufactured. The bark belonging to the Madras Government used at the Naduvattam factory consisted of 436,614 lbs. from local purchases and 132,037 lbs. from Government plantations. This resulted in the manufacture of 17,037 lbs. of quinine sulphate and 14,918 lbs. of *Cinchona* febrifuge. The following table shows at a glance the quantities of bark used, and of the quinine sulphate and *Cinchona* febrifuge produced, at the two factories:—

—	Bark used.	Quinine sulphate.	Cinchona febrifuge.
Mungpoo factory—	Lbs.	Lbs.	Lbs.
1. Government of India	140,277	5,417	3,130
2. Government of Bengal . . .	918,072	35,951	17,371
Naduvattam factory—			
1. Government of India	78,506	5,048	1,350
2. Madras Government	568,651	17,037	14,918
Total .	1,705,506	63,453	36,769

The quantities of the two drugs issued during 1928-29 are given below:—

—	Quinine sulphate.	Cinchona febrifuge.
	Lbs.	Lbs.
Government of India stock	32,134	4,458
Bengal stock	23,215	17,634
Madras stock	22,696	9,302
Total	78,045	31,394

The actual receipts of the Government of India from the sale of quinine during 1928-29 were Rs. 386,144, which more than covered the total expenditure. There is, however, a large accumulation of stocks of quinine sulphate and *Cinchona* febrifuge,—for which a satisfactory use has not yet been found.

A considerable advance was made in scientific knowledge of the habits of the *Cinchona* plant in 1929, as a result of the exceptional drought which prevailed in South Burma during the late autumn. Over a large area the plantations became almost leafless, and the few trees that had previously exhibited signs of disease succumbed; but within a week of the conclusion of the drought the remainder were putting forth new and luxuriant growth with a vigour which had never been anticipated, and which clearly demonstrated that it is scarcely correct to assume that the *Cinchona* plant is an exotic which it is difficult to rear.

The whole of the Government's policy with regard to quinine is at present in a state of transition, since the investigations made by the Royal Commission on Agriculture into the subject, and described two years ago in their report, raised a number of complex and far-reaching problems,—as for instance how far the present methods of manufacture and distribution are satisfactory, to what extent it is possible to reduce the price to the consumer, whether India can become self-supporting in *Cinchona* products and dispense with imports, what exactly should be the respective responsibilities of the Central and provincial Governments of India in the matter,

and whether the existing responsibilities of the Botanical Survey in connection with production and distribution should be maintained,—which are still the subject of official consideration.

The Zoological Survey of India was established in 1916, when the Zoological and Anthropological Section of the Indian Museum was converted into a Survey on a basis similar to that of the Geological and Botanical Surveys. The Indian Museum itself dates back to 1875, and at the outset its zoological and anthropological collections consisted almost entirely of material handed over by the Asiatic Society of Bengal, whose members had been accumulating systematic collections since 1814. Organized zoological investigation in India has thus been in continuous progress for the last 116 years. From the foundation of the Museum in 1875 to the time when the Zoological and Anthropological Section was established as a separate Survey, the Curator (or as he was subsequently termed, the Superintendent) of the Indian Museum has been a zoologist, and among the officers who have held the appointment have been such well-known workers as Anderson, Wood-Mason, Alcock and Annandale. At the time when the Museum was opened the Government of India created the appointment of Surgeon-Naturalist to the Marine Survey, and provided that the collections made by the Survey ship "Investigator", should be housed in the Indian Museum. In 1916, when it was first started, the staff of the Zoological Survey consisted of only four officers,—the Director, one Superintendent, and two Assistant Superintendents,—but during the intervening years there has been an increase, and at the present time there are seven officers,—the number of Assistant Superintendents having been increased to five, one of whom is an anthropologist. With the exception of the Director, all the officers are Indians. The main functions of the Survey are to investigate the fauna of India both in the field and in the laboratory, and to arrange and preserve the collections in the zoological and anthropological galleries of the Indian Museum. In addition the Department issues two series of publications upon zoological research, namely the "*Records*", and the "*Memoirs of the Indian Museum*". One volume of the "Records" is produced yearly, while issues of the "*Memoirs*" appear from time to time as circumstances require. Another important feature of the Survey's activities is the work it achieves in co-operation with other scientific bodies.

As regards the field investigations of the Survey, every officer in the Department is expected to be on tour for some two or three months in each year, and more protracted tours are undertaken from time to time for special purposes. During the year under review two important tours were made by members of the Survey staff, one to Chitral in connection with Dr. George Morgenstierne's expedition, and the other to the Eastern Ghats in co-operation with members of the Bombay Natural History Society. Dr. Morgenstierne had applied to the Government of India, through the Norwegian Institute for Comparative Research in Human Culture, for permission to proceed to Chitral and carry out a linguistic survey of the area, and it was felt that the value of such a tour would be still greater if a zoologist and an anthropologist from the Survey could accompany it. The expedition returned with some extremely interesting ethnographical and zoological material and notes from various parts of Chitral, and striking cinematographic records were taken of some of the country dances. The survey of the Eastern Ghats also yielded some useful results and a large collection of zoological specimens was brought back which is now being examined in the Department's laboratories.

During the year several important pieces of research work were completed in the laboratories, and a number of other interesting investigations were in progress. Of the published papers describing completed researches one may mention "*The Fish of the Indawgyi Lake and the Streams of the Myitkyina District (Upper Burma)*", "*The Freshwater and Amphibious Gastropod Molluscs of the Indawgyi Lake and of the connected freshwater areas in the Myitkyina District, Burma*", and "*A Revision of the Indian Siphonaptera, Pt. I., Family Pulicidæ*", which were issued in the "*Records*"; and "*The Copepoda of Indian Seas; Calonoida*" and "*An aid to the Study of Hamilton Buchanan's 'Gangetic Fishes'*", produced in the "*Memoirs*". In addition to providing members of the staff with facilities for research work, the headquarters of the Survey forms a focus for numerous independent post-graduate investigations in Zoology, and workers come to it from all over India in order to make use of the laboratories and to consult the library. As the opportunities offered become more widely appreciated and the number of research workers in India increases, the activities of the Survey in this line are steadily expanding, and the increasing popularity of the Department has already thrown a con-

siderable strain on its resources; the number of outside workers making use of the laboratories and libraries rose from 12 and 25 respectively in 1927-28 to 23 and 35 in 1929-30, and already the establishment is finding considerable difficulty in providing the laboratory space that is required of it and the accommodation that is needed for its library and collections.

The most striking recent example of co-operation between the Zoological Survey and other scientific bodies has been the work it has accomplished in collaboration with the Archæological Survey. Quantities of human and animal remains recovered by the latter organization as a result of its excavations have on several occasions been entrusted to the Zoological Survey for expert examination. A report on the human remains excavated at Nal in Baluchistan was published in 1929 as an Appendix to the Report of the Archæological Survey of India, and reports dealing with both human and animal remains excavated at Mohenjodaro have been completed and now await publication. Further anthropological work was carried out on two human skulls discovered by Sir Aurel Stein in Makran, and on a number of skulls brought back by the expedition made to those parts of the Naga Hills, in Burma, where human sacrifices were until recently carried out; these latter skulls were entrusted to the Zoological Survey by the Governments of India and Burma and a complete report upon them will be published shortly. Apart from the work done for the Archæological Survey, a large number of fish have been identified and reported on for the Harcourt Butler Institute of Rangoon, and for the Bombay Natural History Society, and it is a matter of considerable pride to the Department that the whole collection of Lamellibranch Molluscs made by the "Siboga" expedition to the Malay Archipelago has been entrusted for identification to the Zoological Survey by Dr. Max Weber of Amsterdam.

In the Indian Museum itself the Zoological Survey is responsible for the maintenance of the exhibits in the six zoological galleries and the large anthropological and ethnographical gallery. Within the past year a large amount of work has been done on the exhibits and 47 fresh specimens have been added to the bird and mammal galleries.

Attention was drawn during the year to the fact that Japanese fishermen have for some time past been sending up a number of boats each year from Singapore to the coasts of the Andaman and Nicobar Islands to collect *Trochus* and *Turbo* shells for use in the

mother-of-pearl button industry; and the authorities invited the Zoological Survey to undertake investigations and research whereby the fisheries may be put on proper economic basis. If the industry can be properly organized, and over-fishing prevented, it is believed that it should be capable of yielding a considerable revenue to the State.

We have now briefly summarized the recent achievements of the Archæological, Geographical, Geological, Botanical and Zoological Surveys, and in previous Chapters we saw something of the work undertaken by the Government in other branches of applied science, such as Medicine, Meteorology, Agricultural and Veterinary Science, and Forestry. The rest of this Chapter will be devoted to an endeavour to give some indication of the development of the various scientific activities throughout the country which do not directly concern the Government, but which nevertheless are undoubtedly relevant in a review of the country's moral and material progress.

During the year under review the prestige of Indian scientific investigation was substantially enhanced by the world-wide recognition of the importance of the radiation phenomenon known as the Raman Effect. Its discoverer, Sir C. V. Raman, F.R.S., holds the Palit Chair of Physics at Calcutta University, and the appreciation of his work throughout the scientific world has led to his being the recipient during the year of academic honours in many countries. The Raman Effect is a peculiarity of light when passing through transparent substances, by means of which rays are produced of a colour different from that of the incident beam, and its discovery has furnished both physics and chemistry with a new tool for research into the ultimate structure of matter; in consequence, distinguished physicists and chemists all over the world have taken up its further study, and contributed to the already substantial literature which has grown up round the subject. At Calcutta, in the laboratory of the Indian Association for the Cultivation of Science, a group of young physicists and chemists under Sir C. V. Raman's leadership have been carrying on investigations in this and other fields of research, and the results of their work are recorded in the Indian Journal of Physics, which has now an international circulation; and important and valuable work is also being done at the Indian Institute of Science at Bangalore. That physical Chemistry has taken root in India and is flourishing is also shown by the Annual Report on the Progress of Chemistry for 1929,

issued by the Chemical Society of London. On the physical side, various achievements of Indian investigators,—notably Mr. P. Krishnamurti's studies of the structure of organic liquids and solutions by means of X-rays, and the important discoveries made by Mr. S. Bhagavantam on the relations between crystal structure and magnetic behaviour,—come in for special notice, while in chemistry the work of Mr. K. Venkataraman and Mr. P. K. Bose on the synthesis of the flavones and the thiazoles obtain individual mention. Moreover, the Journal of the Indian Chemical Society, which is the chief medium for publishing the results of researches in these subjects in this country, has been steadily increasing in bulk and in the frequency of its appearances, and has now become a regular monthly publication; and the number of papers presented to the Chemical Section of the Indian Science Congress is very considerable. Finally, no description, however brief, of the recent work of Indian investigators in this field of research would be complete without reference to the discoveries of Professor Meghnad Saha, F.R.S., of Allahabad, which are comparable in importance with those of Sir C. V. Raman. The value of Professor Saha's work lies in the fact that it has bridged a gulf between the modern theories of heat and electricity in a most interesting manner, by demonstrating that ionization of individual atoms can be effected by heat and pressure as well as by electrical means.

Research in higher Mathematics in India has for some time been satisfactorily stimulated by the publications and activities of the Indian Mathematical Society and the Calcutta Mathematical Society. Both these bodies have now completed over twenty years of useful life, and the Calcutta Society has celebrated the event by issuing a special volume of original papers contributed by leading mathematicians from all over the world. An important event of recent mathematical history has been the publication by the Cambridge University Press of a volume of the collected papers of the late Mr. Srinavasa Ramanujan, F.R.S. The death of this exceptionally brilliant scientific thinker was a great loss to Indian Mathematics; but papers on the theorems propounded by him continue to appear from time to time in the British mathematical periodicals.

As regards Botany, Professor S. R. Kashyap, of the Government College, Lahore, has published a useful standard volume during the year on the systematics of the Liverworts,—a group of plants

whose unimpressive appearance is discounted by their great phylogenetic importance. Professor Birbal Sahni, of the University of Lucknow, has continued his valuable researches in Palæobotany, and has recently made a special study of Indian fossil conifers. At Benares Hindu University some interesting results were achieved during the year by Professor Inamdar, and the workers associated with him, from their researches in plant physiology; and interest in this branch of the Science was naturally accentuated by the publication of another volume on plant movements by Sir J. C. Bose.

In Zoology, sound work is being done not only at the Indian Museum,—as we have already seen,—but also in the Universities; there do not, however, appear to have been any outstanding recent achievements to report. The publication of a series of special zoological monographs under the editorship of Professor K. N. Bahl, of Lucknow University, is an enterprising undertaking that deserves mention.

Anthropology is for obvious reasons a science of special interest to India, and it is satisfactory to note that it is not being neglected. Amongst the notable recent contributions to this branch of knowledge may be mentioned the sumptuous series of volumes on the tribes and castes of Mysore State compiled by Rao Bahadur L. K. Anantakrishna Aiyar of Calcutta University, and the results of the researches of Dr. J. H. Hutton, I.C.S., published in the Proceedings and Memoirs of the Asiatic Society of Bengal. An interesting occurrence in an allied branch of science has been the establishment of a school of research in Experimental Psychology at Mysore University under the leadership of Professor M. V. Gopalaswami, and its progress will be watched with interest.

Medicine, Agricultural and Veterinary Science, Forestry and Meteorology are, as we have seen, primarily matters of official concern in India, and research work in them is carried on almost exclusively in Government institutions. But obviously the association of non-official scientists, and especially of University men, with Government workers in these fields of research would be to the advantage of both groups, and it is definitely the policy of the Government of India, of the Imperial Council of Agricultural Research, and of the Indian Research Fund Association, to encourage this. Some scientific achievements of Indian medical men during recent years are worthy of particular notice. Dr. Kedar Nath Das, the well-known gynæcologist of Calcutta, has lately

published a treatise on "Obstetric Forceps" which contains much valuable and original work and has been described by the reviewers in the Medical Press as a masterpiece on the subject. Another important publication has been the paper on kala-azar written by Dr. Upendra Nath Brahmachari, the well-known specialist in this disease, in which are set forth his considered opinions on its symptoms and treatment; and Mr. M. O. T. Iyengar's investigation of the distribution of malaria and malarial mosquitoes in Bengal earned him the Minto Medal for Medical Research in 1929. At present the chief instrument for bringing both official and non-official workers in the various branches of Natural Science into contact, and providing for the exchange of views which is so desirable, is the Indian Science Congress, which is held annually under the auspices of the Asiatic Society of Bengal. This institution has already performed a substantial amount of useful work in co-ordinating and stimulating scientific activity throughout the country and bringing a spirit of healthy criticism to bear upon it, and its functions are likely to prove increasingly important in the future.

CHAPTER X.

The Provinces.

In this, our concluding Chapter, we will attempt to deal, though necessarily briefly, with those aspects of Indian administration which do not now come under the direct control of the Government of India. There is no need, at this stage of our undertaking, for us to enter into a detailed description of the means whereby authority has gradually come to be delegated, during the course of Indian constitutional evolution, from the Central to the provincial Governments, since some indication of this process has been given from time to time in the preceding pages of this volume,—particularly during our discussion of the origin of the existing financial system in the opening pages of Chapter VII,—and, in addition, previous issues of this Report have dealt with the matter in some detail. It will be sufficient to say that until the introduction of the "Montagu-Chelmsford Reforms," under the Government of India Act of 1919, the supreme executive and legislative authority in this country,—despite the tentative changes in the direction of strengthening the provincial administrations which were effected under the Indian Councils Acts of 1861 and 1892 and the "Morley-Minto Reforms" of 1909,—remained vested in the Central Government, to which the provincial Governments were in the last resort, and except for minor details, entirely subordinate,—being indeed in the position of mere agents through which the over-riding jurisdiction of the Centre was exercised. The essence of the changes introduced in 1919 may be said to have consisted, firstly, in the definite transfer, under what are known as the Devolution Rules, of responsibility for certain administrative subjects from the Government of India to the provincial Governments, and, secondly, of the sub-division, owing to the introduction of the principle of "dyarchy," of such subjects as were delegated to the provincial Governments into two groups,—one of which was "reserved" within the control of the Governor working with Executive Councillors appointed by the Crown, and thus responsible, ultimately, to the Secretary of State and to the British Parliament and people; while the other was "transferred" to the Governor working with Ministers selected from members of

the provincial legislature, and responsible, through that body, to the Indian electorate. Of the subjects over which the Government of India retained control the most important were Military and Foreign Affairs, Tariffs and Customs, Railways, Posts and Telegraphs, Income-Tax, Currency and the Public Debt, Commerce and Shipping, and legislation relating to Civil and Criminal Law, while those delegated to the provincial Governments generally speaking included Law and Order, Land Revenue, Irrigation, Forests, Local Self-Government, Medical Administration and Public Health, Education, Public Works, Agriculture, Fisheries, Industries, Co-operative Societies, Registration, and Excise. Of these latter subjects, that is to say those for which the provincial Governments were given responsibility, the first four, namely Law and Order, Land Revenue, Irrigation, and Forests, fell within the first of the two groups to which we have referred and constituted the "reserved" subjects, while the remainder were "transferred" to Ministers answerable to the Provincial Legislature.*

This brief summary should have been sufficient to remind such readers as are comparatively unfamiliar with Indian affairs of the essential features of the existing constitutional structure, and we may now proceed to our description of the more important events that occurred during the year under review in connection with the administrative heads for which the provincial Governments are now responsible, taking the "reserved" subjects first; and since it has been found more convenient to treat two of these subjects, that is to say Forests and Irrigation, in an earlier portion of this book,—namely Chapter IV,—there only remain Law and Order,—or police administration,—and Land Revenue, to be considered before we pass on to examine those aspects of public affairs over which the Indian electorate is now, except for the emergency powers which remain vested in the provincial Governors, directly responsible.

The existing police organisation in India has been evolved out of the force which was established in Sind by Sir Charles Napier in the Forties of last century, and modelled on the Irish Constabulary of those days. The Police all over India are now organised, disciplined and controlled according to the provisions of the Police Act of 1861, and by Police Rules made thereunder

* It should be mentioned that in the Bombay Presidency, and Burma, Forests, also, is a "transferred" subject.

by provincial Governments to suit local conditions. In some Provinces there are separate Police Acts. Each Province recruits its own police force, the administrative head of which is the Inspector-General, who has under him a number of other officers holding the rank of Deputy Inspector-General. The force is divided among the Districts of the Province, each District force being under the control of a Superintendent of Police who is a member of the Indian Police Service and is responsible for its discipline and organization. Every District is divided up into a number of police station jurisdictions each in charge of a "Station-house Officer," who is usually of the rank of Sub-Inspector. The police station, or *thana,* is the basic working unit of the Indian police system. As a general rule the Sub-Inspector at the *thana* is the first officer to receive a report of any serious crime committed within his jurisdiction, and upon him devolves the duty of investigating these reports as well as those cases sent to him by a Magistrate, and, if possible, of bringing the offenders to justice. This officer's duties are however far from being limited by his work of reporting and investigating crime; in many parts in India he is the only representative of the Government for miles around, and almost everything that happens within his jurisdiction concerns him to some degree.

Although the Indian police force, in its standard of efficiency, is thoroughly modern, it nevertheless contains certain indigenous elements of great antiquity. Over practically the whole of India, for example, the old pre-British village watchman, or *chaukidar,* still exists. His first duty is to report crime, but like the *thanadar,* his functions are many and varied, and include the arrests of offenders, general aid to the police, surveillance over bad or suspected characters, and the general supply of local information, particularly when an investigation is being held into a crime in his own village.

For English readers the word "police" conjures up a vision of the typical Borough force with its members serving parmanently within comparatively narrow confines, or of the country constabulary with the rural policeman stationed in his little country village and covering a beat of a few square miles of countryside. But the arrangement in India is different. In the three Presidency towns of Calcutta, Madras and Bombay, and also in Rangoon, the police are, it is true, organised as a separate force under the

command of a Commissioner of Police,—though even here there is a distinction, since the force is financed from provincial revenues instead of from rates levied locally, as in England; but everywhere else in India, however big a city may be, the police stationed therein, instead of being a purely local force, form part of the police force of the District in which the city is situated, and are liable at any time to be transferred to a rural station many miles away. Since the average personnel of the police station jurisdictions into which the whole of British India is divided does not exceed a dozen or so men,—including the Station House Officer, one or more assistants, and a head constable who acts as deputy to the Station House Officer and looks after the men,—and since the area of these jurisdictions is very large, it is impossible for the police to make more than occasional visits to the remoter parts of them, and the effectiveness of the police administration is thus very closely dependent upon the co-operation of the village watchmen, the village headmen, and the general public. One other important point in which the police force of this country differs from that of England has to be borne in mind; all over India, certain sections of the Police have to be provided with and trained in the use of arms, since they are frequently faced with the necessity of conducting operations against armed and desperate men to whom human life is of no account, or in dealing with serious riots and disturbances arising from communal or other causes.

The custom of hoarding wealth, whether in cash or in gold and silver ornaments, which is so prevalent throughout this land, is a frequent inducement to crime; and numerous sections of the population are always potentially criminal, either because of their poverty, or from the desire for adventure or revenge. Moreover, from time immemorial wandering criminal tribes, many of which are still unreformed, have been accustomed to move to and fro over the plains of India, and it is still possible, owing to the country's enormous distances and the small numbers of the police, for gangs of armed robbers, or "dacoits," to continue their depredations for weeks or months on end,—at any rate in the remoter Districts,—before they are captured or killed. Cattle stealing, too, is very prevalent, and the peasant is often prepared to pay ransom for his animals rather than invoke the aid of the police; indeed, in many parts of the country, particularly in the

North, there is a considerable class of persons who make a regular living by acting as middlemen between the cattle-thief and his victim. Thus there has at all times been ample work for the police in India in dealing with crimes arising from the peculiar circumstances and customs of the country, or from the ordinary aberrations of human nature. But in recent years they have found themselves confronted with problems of an altogether different kind; for the spread of modern education and technical knowledge, and the improvement in communications, has brought about an alarming increase in the more sophisticated types of crime such as bogus company promoting, coining, forgery, confidence-tricks, and embezzlement, and enabled the criminals to work over much larger areas. Unquestionably, however, the police have been quick to re-adjust their ideas and practice to the changing conditions, and the Criminal Investigation Departments in the various Provinces are well abreast of the latest criminological developments. What is known as the *modus operandi* system is now being introduced, and crimes such as burglary are not investigated separately but in the mass,—the movement of gangs and the persons associated with them, individual peculiarities, and the characteristic methods employed being carefully noted. Yet another of the duties of the police, which is much in evidence at the time of writing and which in many ways is the most difficult of all, since it requires the exercise of exceptional patience and discretion, is that of dealing with disturbances and demonstrations of a political nature. This topic, however, falls properly within the purview of next year's Report, since there were few disorders arising out of the Civil Disobedience Movement during the period under review, and it need not be enlarged upon here.

We may now proceed to describe the more important events affecting the police that occurred in the various Provinces and administrations of British India during the year. In Assam the economic distress that resulted from the serious floods in the Districts of Sylhet, Nowgong and Cachar caused an increase in crimes against property in that region, particularly in Sylhet District, where the number of burglaries and thefts rose considerably. As a preventive measure some of the criminal gangs have been brought under the operation of the Criminal Tribes Act and similar action is under contemplation against other gangs. By close supervision, and careful patrolling on dark nights, crime

was held in check in Cachar District. Owing to the large influx of immigrants from Mymensingh and other parts of Bengal, many of whom are criminals, there was an increase of crime against property in the Districts of Goalpara, Darrang, Nowgong and Kamrup. Goalpara borders on Bengal, and the criminals of Rangpur, Cooch Behar, and Jalpaiguri extend operations up to that District in collaboration with the local bad characters. Arrangements are being made for joint road patrols with the Bengal Police in those areas. The opening of the new Karimganj Longai Valley branch railway line evoked a number of attempts at train wrecking, but as soon as special constables were appointed, the trouble stopped. The Police were called in to deal with several cases of rioting among labourers in tea gardens in the Districts of Sibsagar, Darrang and Nowgong during the year. All classes of serious crimes, that is to say murder, culpable homicide, dacoity, robbery, burglary, theft, coining, and riot showed increases during the year, except cattle theft.

In Bengal, exclusive of Calcutta, there was a small decrease, amounting to 530 cases, in the total volume of cognizable crime reported during the year under review, but the number of serious crimes increased slightly. It was, however, satisfactory that cases of dacoity decreased by over 100, and of theft by 474. The officers of the Criminal Investigation Department co-operated with the district police in dealing with outbreaks of dacoity in several Districts, and the timely arrest of a gang in Bogra which was preparing to commit a dacoity, the capture of two gangs in Nadia in the act of committing dacoities, and the discovery and successful prosecution on specified charges and for bad livelihood of other gangs, helped to keep this form of crime under control. A noteworthy affair occurred at Char Balamara in Noakhali, whither, on receipt of information regarding the commission of a dacoity, police were despatched, and, in a scuffle that ensued, opened fire with the result that two dacoits were fatally injured and another arrested. An important piece of work on the part of the police was the successful prosecution of a bad livelihood case against Satin Sen and his followers who, formerly, had been responsible for the notorious *satyagraha* movement at Patuakhali in the District of Bakarganj. Acts of gallantry on the part of the police were not wanting during the year, the most conspicuous being that of a constable who jumped into a river at great personal risk and

saved the life of a doctor who was on the point of drowning. Another constable saved a woman and two children who had fallen into a river in flood. A further instance was that of a Sub-Inspector who risked his life in rescuing four persons whose boats had capsized; this officer also secured the arrest of a gang of armed dacoits, and his services were recognised by the grant of a reward. On several occasions during the year the police were attacked in the execution of duty and no less than 94 officers and men received injuries in these circumstances.

In Bihar and Orissa the results of the year were satisfactory, true cognizable cases dropping to 45,638, which is the smallest total ever obtained since the Province was constituted. All classes of serious crime decreased except murder. Communal tension caused some anxiety during the year, especially during the *Bakr-Id* Festival, but no really serious clashes occurred. 9 constables were mentioned as having done good work in saving life during the period under review.

In the Bombay Presidency and Sind, exclusive of Bombay City, the total number of cognizable crimes reported during the year increased from 38,978 to 40,019. In the Presidency proper, Class VI, that is to say offences under Minor Acts, was responsible for a rise of 249 cases, as a result of greater police activity in this connection. The rise in cases under the Indian Penal Code was fairly general. In three Districts, where it was really substantial, a partial failure of rains had occurred and caused some economic distress. Communal tension continued to prevail in certain Districts, and entailed considerable extra work on the part of the police, whose sanctioned strength in certain areas is barely sufficient for normal requirements. As a result of the operation of these various factors the total number of cases of reported crime in the Presidency proper was greater by 1,396 than during the previous year. In Sind, however, the number of cases reported both under the Indian Penal Code, and Class VI, declined, being 355 lower than during the previous year. The Crime Record Branch in the Criminal Investigation Department continued to prepare the crime records of inter-district and inter-provincial criminals, 62 such records having been prepared and published in the Police Gazette during the year. 441 more records were partially dealt with. These records should prove very useful to District officers in tracing habitual criminals and keeping them

under surveillance. The *modus operandi* system was introduced during 1929 in certain Districts in the Presidency proper, but it was not possible to do this in all, as the personnel required for it could not be made available. Where the introduction of the system has been effected, the necessary staff has been found by removing men from other duties, since financial stringency has precluded the employment of a special staff. One conspicuous case of bravery among the members of the force deserves mention; this occurred in connection with the discovery at Bhusuwal railway station, in September, of bombs and a revolver in the possession of two individuals who, when apprehended, opened fire on the police in an endeavour to escape, and were only captured as a result of the gallant action of Head Constable Bendigeri. The numbers of policemen killed and injured during the year in the performance of their duties were 3 and 2 respectively.

In Burma, where the prevalence of serious crime has caused grave anxiety for many years, there was some improvement during the period under review. Throughout the Province as a whole,—exclusive of Rangoon, which will be subsequently treated,—there was a decrease in all classes of serious crime except arson. Cases of murder declined from 1,150 to 1,135, and of the unauthorized use or possession of firearms, from 285 to 274. These figures are still unpleasantly high, particularly that for murder, but the decrease in the number of dacoities and robberies was more pronounced, the totals having fallen from 475 and 321 respectively to 401 and 269. 4 police officers and men were killed during the year and 8 were injured in connection with the performance of their duties.

In the Central Provinces the year was uneventful. A small increase in crime, amounting to 4 per cent., occurred, and was attributed to the scarcity which prevailed in the Northern parts of the Province as a result of the failure of the *rabi* crop owing to frost. Communal tension was considerably less than in the previous year.

Delhi was distinguished during the year by the occurrence of the two notorious terrorist outrages which have already been mentioned in Chapter I,—namely the bomb-throwing episode in the Legislative Assembly on the 8th of April 1929, and the attempt on the 23rd of December to wreck the train in which H. E. the Viceroy was travelling. Apart from these two spectacular crimes

the year was not very eventful. Mention may be made of a daring robbery which was committed on the Viceregal Estate, shortly before the conclusion of the period covered by the previous issue of this Report, when jewellery valued at Rs. 6 lakhs, belonging to H. H. the Maharani of Cooch Behár, who was staying there, was stolen. Acting with great energy on the slight clue provided by the fact that a low-class woman had been seen offering a piece of very valuable cloth for sale, the police within 48 hours recovered a large part of the jewellery from places as far distant as the bottom of a well in Aligarh and other hiding places in Lucknow and Delhi; and within a fortnight 98 per cent. of the stones had been recovered. An important gang of burglars and receivers was given long sentences of imprisonment in connection with this crime, and the Delhi police can congratulate themselves on its successful conclusion. In recent years the growth of literacy among the constables of the Delhi Police has been remarkable. Between 1920 and 1928 the percentage of literate constables advanced from 27 to 48 per cent., and in 1929, for the first time in history, more than half the constables,—indeed as many as 57 per cent.,—were literate. A disquieting tendency during the period under review was the increase in the number of misleading, tricky, or definitely fraudulent financial companies in Delhi. There were several life assurances concerns floated on deplorable terms, managed with cynicism, and obviously bound for bankruptcy. Fraudulent fee-snatching employment *bureaux* multiplied, and also did the most ludicrous lotteries and ballots. But the commonest and in the long run the most mischievous form of fraud consisted of elaborate systems, usually based in the "multiple entrance fee *cum* snowball" fallacy, whereby poor people were blatantly cheated with deceptive promises of obtaining loans. The existing law appears unable to grapple with these frauds despite their disastrous social and economic results.

In the Madras Presidency,—exclusive of the city of Madras,—the amount of grave crime during 1929 was lower than it has been since the reorganization of the police force effected as a result of the Police Commission of 1902-03. Improvements in methods of detection, more extensive use of the security sections of the Criminal Procedure Code, good work in handling wandering gangs, and closer supervision of habitual criminals and members of criminal tribes, have been the chief causes contributing to this

excellent result. The year was almost free from serious communal or labour disputes and political agitation was not very vigorous. The police were, therefore, able to devote themselves to their ordinary duties. Among the acts of gallantry reported during the year may be mentioned that of the Town Inspector of Mangalore,—Mr. M. S. Chammad,—and a Sub-Inspector, who were instrumental in preventing two armed mobs of Moplahs and Mangalore fishermen from starting what had every appearance of becoming a serious riot. One constable was killed and two were injured in the performance of their duties during the period under review.

The peculiar organization of the police and associated forces in the North-West Frontier Province has been described in Chapter II, and need not be enlarged upon here. It will be sufficient to remind the reader that in addition to the ordinary civil police force, which differs from the police forces throughout the rest of India only in the fact that it is more extensively provided with arms, the Province is served by a special body known as the Frontier Constabulary, whose functions are intermediate between those of ordinary police and of military forces. Of these two bodies,—the Civil Police and the Frontier Constabulary,—the latter is numerically the smaller. During the year under review its total strength, exclusive of its 17 British officers, was 4,547, including 435 mounted cavalry. The most important operation undertaken by the Constabulary during the year was the occupation and protection of the Guaranteed Area in the Shiah Salient of the Kohat District. Six platoons of Constabulary held the salient throughout the year, and although there were many anxious times, when it appeared that the Sunni tribes,—the Orakzais and Afridis,—would succeed in penetrating the salient, they never actually did so. Otherwise, the year was remarkably tranquil, and no change was made in the general measures adopted during the previous five years for protection against raiding. The number of trans-border raids amounted to 4 only, and the system of patrols was well maintained. The Peshawar border remained fairly peaceful, and no raids into British territory were made in the Khyber Agency. The most noteworthy crime of the year was the murder in February of Lieutenant E. O. Hawkes, R. E., Assistant Garrison Engineer, Landikotal. In addition to its primary duty of defending the border, the Constabulary was continuously engaged in other miscella-

neous duties within the Districts, and the Shabkadar Constabulary rendered particularly valuable services in connection wih the floods in August. During the winter, members of the force were kept very busy in the Daraban and Tank areas controlling the Powindahs. The Bannu constabulary arrested 42 men during the year in possession of unlicensed arms. The sanction of the Government of India was obtained during the year to the scheme for enlisting and training 100 reservists for the Constabulary, but the terms offered were considered inadequate, and little progress was made until they were improved. Turning now to the work of the Civil Police, we find that there was a considerable increase in the number of cases of cognizable crime in the Province during the year, the total being 4,711, as against 4,300 in 1928. The 1929 figure, however, is still substantially below the average for the years 1920-24. Unfortunately, although the number of cases of murder declined from 518 to 490, crimes of violence against the person continued as a whole to increase, and it was remarked that the facility with which firearms can be procured in the Province was to a large extent responsible for this. The employment of hired assassins continued to be a prevalent practice, and it was reported that throughout Peshawar District the services of professional murderers can be obtained without difficulty for Rs. 400 or less. This state of affairs of course renders the task of the police in dealing with cases of murder peculiarly difficult, and the difficulties are further increased by the tendency on the part of those related to the victim of a murderous assault to manufacture evidence, immediately after the commission of the crime, against the person or persons whom they imagine to have been responsible for instigating it. A satisfactory feature of police work in the Province during the last five years has been the steady increase in the number of convictions obtained in relation to the number of true cases investigated; nevertheless the personnel of the Prosecution Branch was, during the year under review, still considerably below the somewhat meagre standard prescribed more than 20 years ago. Moreover the working of the courts in connection with the criminal cases gave increasing cause for dissatisfaction, the delays which had already begun to yield a variety of evil effects in previous years having been even more pronounced; during 1929 the disposal of more than 40 per cent. of such cases was delayed for over a month. The conduct and loyalty of the Civil

Police in the Province during the year continued to be praiseworthy, and the services rendered by the force in assisting in the relief-work during the Indus floods were particularly commendable.

In the Punjab, during the early months of 1929, a considerable increase in crime, particularly burglary, occurred, largely as a result of the exceptional concentration of police that become necessary after the murder in Lahore of Mr. Saunders and Head Constable Chanan Singh, and the consequent lack of ordinary patrolling elsewhere. This state of affairs was subsequently remedied, but the famine that prevailed in the South-Eastern parts of the Province, together with the unprecedented floods in the rivers Jhelum, Chenab, and Attock, had an adverse effect upon crime in the latter part of the year. But despite these disturbing factors the police were successful in rounding up a considerable number of burglars and dacoits, and the number of reported cases of crime,—exclusive of Security Cases,—fell from 45,166 to 44,397. Among the murders that occurred during the year was that of Mahasha Rajpal, the author of the pamphlet "*Rangila Rasul*", which has already been referred to in Chapter I. The number of burglaries decreased from 15,272 to 15,242. The introduction of the *modus operandi* system of detection has proved very satisfactory, and enabled some of the oldest and most difficult cases to be cleared up. There was a decrease from 155 to 143 in the number of dacoities reported, and one of the most outstanding features of the year was the remarkable success of the police in rounding up and killing some of the most dangerous and desperate of the dacoits and desperadoes who have recently disturbed the peace of the Province. But in the course of these operations no less than 8 police officers were killed or injured. Another very creditable piece of work during the year was the unravelling of the Lahore Conspiracy case, which has been discussed in Chapter I. A further case of political importance with which the police were concerned was the train dacoity which took place in October near Ahmedgarh railway station on the Ludhiana-Dhuri-Jakhal section of the North-Western Railway. The object of the outrage, in which the engine drivers were wounded, was to steal railway money from the cash safe in order to finance an anti-Government publication. All the six accused, including the leader of the gang, Sher Jang, were subsequently arrested and convicted.

In the United Provinces, the weakness of the monsoon, and the distress that resulted from it, led to a slight but definite increase in most forms of crime against property,—particularly dacoity and burglary,—during the year under review. Results from police investigations and in court were, however, well maintained, and from the beginning of 1930 the incidence of crime was reduced to normal. The problem of cattle theft was particularly successfully dealt with by the police, and a small separate staff that has now been constituted to cope with this form of crime in Districts where it is most prevalent. Some progress has been made in the difficult task of popularising branding, which, if generally adopted, might go far towards providing the solution of the whole difficulty. During the year the special dacoity police were much occupied in clearing up the remnants of gangs previously dealt with in various Districts of the Provinces, and in addition, in conducting active operations in Gwalior, Dholpur, and other States of Eastern Rajputana and Central India. In Dholpur notorious gangs of Kanjars and Gujars have been completely broken up and it is particularly satisfactory that out of the gang of 18, mostly Gujars, who were responsible in this area for the atrocious murder of Nail Jiwan Singh and of constable Moonga Ram in March 1928, only four are now at large. In Northern Gwalior, where the extremely difficult ravine country from which the dacoits operate has caused the special dacoity police great embarrassment, good progress has also been made, one of the three chief gangs having been completely broken up and a large number of the members of the other two having been arrested. Unfortunately the statistics of officers and men killed or injured in the performance of their duties showed no improvement during the year, 13 officers and men having been killed and 117 injured. There have been numerous occasions on which small police parties have shown great gallantry in opposing dacoits, and instances of villagers rallying to the help of the police appear to be increasing. In Muttra District, an Inspector led a small police party against a gang of eight armed dacoits, killed two, and captured the remainder with a loss of one member of his party,—a *chaukidar;* and in Agra District a constable who happened to be in a village when it was raided by a notorious armed dacoit gang succeeded in rallying the inhabitants with the result that one dacoit was killed and another wounded, the dacoits being forced to withdraw. Throughout the year steady progress was

made in improving the conditions of service, and the physique and education of the whole force. A large part of the building loan of Rs. 1 crore which was obtained in 1925-26 for the purposes of replacing the many police buildings in the Province that were unsuitable to modern conditions has now been expended with excellent results. Modern methods of physical training have recently been introduced in all Districts, and as a result of the facilities provided by the Army authorities a separate and adequate staff of instructors trained in the army system of physical training is now in existence. The employment of trained teachers, obtained on deputation from the Education Department, in the schools at all District headquarters is bearing fruit, and the percentage of literacy in the force, as a whole, is showing a steady increase year by year. Recruitment was brisk during the period under review and resignations negligible. Communal trouble was less conspicuous during 1929, though outbreaks of smoke seriousness occurred at Dehuli in Mainpuri and Phaphund in Etawah, and additional police had to be imposed in three Districts on account of communal rioting.

As regards the separate police forces in the cities of Calcutta, Madras, Bombay and Rangoon, the Bombay force had a particularly arduous time during the year 1929, owing to the grave labour troubles and communal riots, which have been described in Chapter I. Largely as a result of these exceptional circumstances, the number of serious crimes increased substantially during the year. 139 cases of murder were recorded as compared with 38 in 1928, 249 of rioting and unlawful assembly against 32, 8 of dacoity against 1, 83 of robbery against 73, and 1,735 of burglary against 1,550. The total number of cases dealt with under the Indian Penal Code was 8,031 as compared with 7,786 in 1928. In Calcutta, the year under review was generally peaceful, although the after-effects of the communal riots of 1926 were still apparent. A total of 3,008 persons were convicted in cases under the Indian Penal Code. True cases of rioting, murder, burglary, and theft declined, while those of coining and receiving stolen property increased somewhat. In addition there were small increases in the numbers of cases of dacoity and robbery. In Madras, also, there were no events of outstanding importance during the period under review. The total number of true cognizable crimes recorded under the Indian Penal Code was 3,189 as against 2,738 in 1928,

but the increase was believed to have been to a very large extent due to new arrangements which had been introduced for reporting, registering, and investigating crime. A satisfactory feature was that only 192 crimes were taken direct by complainants to the courts, as compared with 255 in 1928, which indicates that there was an increase in public confidence in the police. In Rangoon there was an all-round decrease in all classes of important crime during the year, the total being 1,108 as against 1,146 in 1928; cases of grievous hurt also fell. The conduct of the force was satisfactory during the year. Unfortunately 2 constables were murdered while on duty.

In previous issues of the Report the legislation passed or put forward by the provincial Governments from time to time in connection with land revenue or tenancy has been briefly described, and we may now proceed to record such further developments as occurred in the year 1929-30. The question of introducing legislation designed to embody in law the principles of land revenue assessment has been under consideration both by the Governments of Bombay and Assam for some time, and during the period under review considerable progress was made in this direction. A revised draft of a Bill to amend the Bombay Land Revenue Code was prepared by the Bombay Government and submitted to the Government of India for sanction in December 1929, and the latter approved it, subject to certain reservations, in March 1930. A revised Bill was also prepared by the Assam Government to supersede the one introduced in 1925, and was put before the provincial Legislative Council in March. The Bill prepared by the Government of Bihar and Orissa, during the period covered by the previous issue of this Report, amending the existing tenancy legislation, was published in August 1929 and introduced in the provincial Legislative Council in September. After its introduction, however, the Government was given to understand that on the question of the transfer of occupancy rights, which was the chief point of controversy, the *zamindars'* party would acquiesce in a modification of the existing law on the transfer of occupancy holding only if they received simultaneously, for the safeguarding of their interests, the right of pre-emption which had already been given to the landlords in Bengal. The provincial Government after consideration decided that this principle ought to be included in the Bill. The *raiyots'* party was known to be opposed to pre-

emption; but it was felt that concessions were necessary on both sides, and that the balance of advantage, even after this change, would still rest with the *raiyots*. At the same time the *raiyots'* representatives were informed that if a Bill containing, as this one did, important concessions to the *raiyots* was nevertheless, by reason of its acceptance of the principle of pre-emption, so distasteful to them that they would prefer that it should be abandoned altogether, the Government would not press it in the Council; and as the Government was subsequently told by the representatives of the *raiyots'* party that they would prefer this course, the measure was not proceeded with. A measure known as the Malabar Tenancy Bill, embodying the conclusions reached by the Government of the Madras Presidency as a result of its conference with the representatives of landlords and tenants of Malabar during the period covered by the previous issue of this Report, was introduced in the Madras Legislative Council in August 1929, and passed in March 1930, subject to certain modifications. It had not however received the assent of the Governor-General by the close of the period under review. A Bill to amend the Punjab Tenancy Act, 1887, with a view to giving statutory effect to the intention of that Act that decisions of the revenue courts under Sections 45 and 50 thereof should be final, by expressly barring recourse to a civil court for the purpose of attacking decisions of revenue courts in such cases, was enacted during the year in the Punjab Legislative Council; and the provisions of the Act were extended in January 1930 to that portion of the administrative area of Delhi which before October 1912 was included within the Punjab.

We may now proceed to consider the "transferred" subjects, taking Local Self-Government, to which some reference has already been made in Chapter IV,—first. From time immemorial there have existed in India indigenous institutions which have undertaken some of the functions of local self-government,—though indeed they have had little in common with the local bodies that now exist in modern democratic countries, having had no elective basis, few recognized duties, and no direct connection with the main administrative structure. Moreover during the period of chaos which preceded the establishment of British rule, and of rapid centralization of authority that ensued upon it, these traditional village bodies tended to be ignored altogether, with the result that when, in the latter part of the XIX century,

their possible utility began to be recognized, they had almost ceased to exist. In 1882, Lord Ripon's administration made a determined attempt to revive such local self-governing institutions as remained, and issued a resolution declaring that the people should be trained in the management of their own affairs, and that political education ought, as a rule, to be given preference over departmental efficiency. This well-meant effort, however did not produce much result. It was inevitable that the infant local bodies should be at first under official guardianship, and this lessened the attraction of the new bodies for public-spirited men, with the result that the growth of initiative and self-reliance among those for whose benefit the system was devised was slow.

But a great change occurred when, as a result of the introduction of the Montagu-Chelmsford Reforms, the control of local self-government was handed over to responsible Ministers. Many fresh laws have been enacted, municipal bodies re-constituted on more popular lines, municipal franchises extended, and the powers of local bodies enhanced. These changes also created a desire for experiment, and one of the most interesting of these was the revival of the old village *panchayats*, or committees of elders, which in some places were amalgamated and called "Union Boards". The general plan adopted was to place these ancient institutions on a modern legal basis and provide them with definite powers and functions. The change naturally aroused doubt and criticism, and some of the new bodies have proved failures, but on the whole it appears that the innovation has come to stay and is justifying itself. It should be remembered that hitherto it has been hampered by a variety of adverse factors, of which financial stringency, political difficulties, and lack of experience were, and still are, the most important.

In 1928-29 there were 776 Municipalities in British India, with about 19,000,000 people resident within their limits, and an aggregate income of Rs. 17·36 crores; but since Calcutta, Bombay, and Madras alone contain some 3,000,000 people, it is obvious that most of the Municipalities are small. The majority of the members of municipal bodies are elected, and the proportion of elected members tends on the whole to increase. Since, however, only 10 per cent. of the population of British India lives in towns, municipal administration clearly cannot as yet effect the majority

of the people and help to educate them in civic duties, and the importance of the District Boards, or rural municipalities, is therefore great. Nearly every District in British India possesses such a Board with two or more Sub-District Boards subordinate to it. In Madras there are also Union Boards, while in Bengal and Bihar and Orissa there are both Union Boards and Union Committees. In 1928-29, the number of District Boards and Sub-District Boards, together with Union Committees and Union Boards, was 5,535. Of the 57,800 or so members of these bodies, about 68·5 per cent. were elected, and 31·5 per cent. were either *ex-officio* members or nominated. The receipts of these institutions (excluding Union Committees and Union Boards in Bengal and Bihar and Orissa) aggregated in 1928-29 about Rs. 16 crores, and their chief activities were education, medical relief and civic works.

Big cities like Calcuttà, Bombay and Rangoon naturally lead the way in municipal progress in India. Here Improvement and Development Trusts have been operating for years, and have done much good. Loans have been floated for such objects as housing schemes, the abolition of slums, the provision of open spaces, the alignment of streets and the segregation of offensive trades. The increased power of local legislatures in these organizations is reflected in increased activities in the organizations themselves; and great interest is taken in many parts of India in election to both Municipalities and District Boards.

Some of the more important legislative proposals or enactments of the year in connection with local self-government may now be described. In Assam a measure known as the Assam Local Funds (Accounts and Audit) Bill, 1929, which is intended to prevent the waste of local funds through the carelessness or negligence of persons entrusted with the duty of making or authorising payments, was passed by the Legislative Council during the period under review.

In Bengal, a non-official Bill to amend the Calcutta Municipal Act, 1923, was introduced into the Legislative Council with the object of separating the Cossipur-Chitpur and Garden Reach areas from the limits of the Corporation of Calcutta, and reconstituting them into separate municipalities under the Bengal Municipal Act, 1884. The Government of India approved the raising of a loan

of Rs. 25 lakhs by the Calcutta Improvement Trust during 1929-30, for thirty years, at 5½ per cent. interest.

In Bombay, a non-official Bill to amend the City of Bombay Municipal Act, 1888, was introduced into the Legislative Council, with the object of widening the franchise by giving the right of vote to all tenants who have occupied a building, or part of a building, within the limits of the municipality of Bombay for not less than six months, irrespective of the monthly rental, and also to provide for payment of members for attending meetings. An official Bill to amend the Bombay District Municipal Act, 1901, the Bombay Local Boards Act, 1923, and the Bombay City Municipalities Act, 1925, was also introduced and referred to a Select Committee, which made several changes in it. The main objects of this measure are to provide for the establishment of a separate pilgrim fund account in municipal areas where a pilgrim tax is levied, and to lay down clearly the procedure for the election of a chairman of a local board on its reconstitution. During the year the Legislative Council passed a non-official Bill, which has subsequently received the assent of the Governor-General, to amend the Bombay District Municipal Act, 1901, with the object of providing that a municipality may, at its discretion, make rules determining the conditions under which gratuities or compassionate allowances may be paid to the surviving relatives of its officers and servants who die during service, and the amount of such gratuities and allowances. The previous sanction of the Governor-General was granted to the introduction into the Legislative Council of the Bombay Local Fund Bill to provide for and regulate the audit by Government auditors of the local funds under the management or control of local bodies in the Presidency exclusive of the city of Bombay. Two other non-official Bills to amend the Bombay City Municipalities Act, 1925, were introduced, their objects respectively being to oblige the Government to make the composition of city Municipalities with a population of more than 100,000 wholly elective, and to empower the Government to frame rules for the special representation of public bodies or associations on the city municipal committees of the Presidency. During the year, sanction was granted to the raising by the Bombay Municipal Corporation during 1929-30 of three loans totalling Rs. 31·43 lakhs, 28 lakhs and 37 lakhs respectively at 5 per cent. in-

terest. The first two loans were required for paying off outstanding debts and the third for financing certain capital works.

In the Central Provinces the previous sanction of the Governor-General was accorded to the introduction into the Legislative Council of a non-official Bill to amend the Central Provinces Village *Panchayat* Act, 1920. The main object of the Bill was to give the village *panchayats* enhanced powers and status in respect of administrative and judicial functions. A non-official Bill to establish the right of all classes of people, without distinction of caste or creed, to the use of all public roads, streets, markets, tanks, and so forth, and to make an obstruction to such use an offence punishable with fine, was introduced with the sanction of the Governor-General. Another non-official Bill to amend the Central Provinces Village *Panchayat* Act, 1920, was introduced, its main objects being to empower a Deputy Commissioner to include a village in a *panchayat* circle; to empower the local Government to remove any of the disqualifications from becoming a *panch*; to provide that if the requisite number of qualified candidates for the post of *panch* is not elected, the local Government may direct that any vacancy of *panch* in a village *panchayat* shall remain unfilled; to provide for the recovery of arrears of taxes levied under the Act with interest at 12½ per cent. per annum by the Deputy Commissioner, as arrears of land revenue; to enlarge the powers of village courts and to extend their jurisdiction to all cases not barred by the law of limitation; to define clearly the primary obligations of a District Council in regard to the establishment and training of village *panchayats*; and to provide for the election of a new *panchayat* before a village is altogether disfranchised. A non-official Bill to amend the Central Provinces Municipalities Act, 1922, was introduced with the object of extending the term of municipal committees from 3 to 5 years, and making it obligatory on landlords when parcelling out their fields for the purpose of building plots, to provide for necessary public amenities such as roads and drains.

In Madras, the Legislative Council passed a non-official Bill to amend the Madras District Municipalities Act, 1920, which has since received the assent of the Governor-General. The main object of this measure is to establish the right of all classes of people and of all communities, irrespective of caste or creed, to have access to and make use of all public places, such as streets,

markets and tanks, which are maintained out of the municipal funds, and to render an obstruction to their use an offence punishable with fine. The previous sanction of the Governor-General was accorded to the introduction of an official Bill, which was subsequently passed, to amend the Madras District Municipalities and Local Boards (Amendment) Act, 1921. The main objects of the Bill are to provide that *ex-officio* councillors of municipal councils should make the required oath or affirmation like elected councillors; and to enable a President, temporary President or Vice-President of a local Board, or the Chairman or Vice-Chairman of a municipal council, to exercise the functions of the President or the Chairman, as the case may be, before he makes the oath or affirmation, provided he makes the oath or affirmation within two months of his election. Two other official Bills to amend the Madras District Municipalities and Local Boards Acts, 1920, were introduced during the year with the sanction of the Governor-General. Having passed through the Select Committee stage, the amended Bills were taken into consideration by the legislature, but in the final stage the motions to pass them into law were objected to. The objections prevailed and consideration of the motions was adjourned. The main objects of the first of these Bills, namely the District Municipalities Amending Bill as amended by the Select Committee, were to abolish the system of nominations to municipal councils, and to secure the representation of women and approved minority communities through reservation of seats at the discretion of the local Government; to remove the disqualification of women from standing for election to municipal councils; to provide for the introduction of adult suffrage at elections to municipalities; to provide for the passing of votes of no-confidence in chairmen and vice-chairmen of municipal councils, and for their removal by the Government *suo motu;* to throw open the office of chairman to election; and to make certain alterations relating to the levy of taxation by these bodies. The objects of the other measure, known as the Local Boards Bill, were to include village *panchayats* within the scope of the Madras Local Boards Act, 1920, and to repeal the Madras Village *Panchayat* Act, 1920; to abolish the system of nominations to local Boards and to secure the representation of minority communities and women through reservation of seats at the discretion of the local Government; to provide for adult suffrage in the *panchayats* constituted under this

Bill; to provide for passing votes of no-confidence in Presidents and Vice-Presidents of local Boards and for their removal by Government *suo motu;* to throw open the office of Presidents of district and circle Boards to election; and to make alterations in the provisions relating to taxes leviable by these bodies.

The introduction of an elective element into the local bodies of the North-West Frontier Province having been approved in principle by the Government of India, the Chief Commissioner during the year revised the constitution of the Peshawar municipal committee so as to make 8 seats in it elective out of a total of 20. Elections were held in November 1929 in accordance with this constitution; but in 5 out of the 8 constitutiencies all candidates but one had retired before the close of the contest, and the general public is reported not to have taken very great interest in the elections.

In the Punjab, the Bill to amend the Punjab Village *Panchayat* Act, 1921, which was passed by the Legislative Council in March 1929, received the assent of the Governor-General and became law. The main objects of this Act are to extend the administrative powers and supervisory obligations of *panchayats,* and to empower the Government to alter the limits of a village and modify the number of *panches* fixed for a *panchayat.* An official Bill to amend the Punjab Municipal Act, 1911, and the Punjab Small Towns Act, 1921, was passed during the year, and after having duly received assent, became law. Its main objects are to enable the Government to transform small town committees constituted under the Punjab Small Towns Act, 1921, into municipal committees under the Punjab Municipal Act, 1911, and to provide that when a notified area or small town is transformed into a municipality, the previously existing committee shall remain in office until the election of a new committee under the revised constitution.

In the United Provinces, the Legislative Council passed a non-official Bill to amend the United Provinces Town Areas Act, 1914, with the object of introducing an elective element into the area *panchayats,* with reservation of seats for minority communities and provision for the appointment by the District Magistrate of an additional member from either the Christian, the Parsi, or the Sikh community in town areas where the local Government so prescribes, and to give greater powers to these bodies; of fixing the qualifications of electors and members of *panchayats* by rule.

subject to general disqualifications laid down in the Act; and of providing for the election of the Chairman directly by the electors of the town area and for that of the Vice-Chairman by the members of the *panchayat*. This measure has now become law. An official Bill to amend the United Provinces Municipalities Act, 1916, was introduced and referred to a select committee, which made certain changes in it. The Bill is designed to provide for carrying on the administration of a municipal board on its supersession by order of the local Government; to define clearly the procedure for the election of a Chairman on the reconstitution of a municipal board, to give the Chairman and his principal officers greater powers in respect of the appointment and punishment of the staff through which they have to conduct the administration; to extend the term of municipal committees from three to five years; and to provide that an executive officer shall have a right of appeal to the local Government against an order of punishment or dismissal passed by a municipal board. Two other non-official Bills to amend the United Provinces Municipalities Act, 1916, were passed and have duly received the assent of the Governor-General. The main objects of these respectively are to relax disqualifications for electors for municipal elections, and to restrict the disqualification on account of conviction by a criminal court to offences which involve moral turpitude; and to provide that one of the two members to be nominated by the local Government to a municipal committee shall be selected from the depressed classes and that the other shall be a representative of any special interest of the municipal area which has remained unrepresented at the preceding general election, provided that neither of these two members shall be a Government servant or a person who was defeated at the preceding general election. The Legislative Council passed two other non-official Bills, which have now become law, to amend the United Provinces District Boards Act, 1922, by widening the franchise through lowering the property and educational qualifications of electors for District Board elections, and through restricting the disqualification on account of conviction by a criminal court to offences which involve moral turpitude; by providing that one of the two members to be nominated by the local Government to a district board shall be selected from among the depressed classes and the other shall be a representative of a class in the rural area which has remained unrepresented on the board after the general election, on the condi-

tion that neither of these two members shall be a Government servant nor a person who was defeated at the preceding general election; by providing that a Chairman shall resign his office when a board by a majority consisting of not less than one-half of its members passes a resolution to this effect; by extending the term of district boards from 3 to 4 years; and by defining clearly the procedure for the election of a chairman and the term of office of a member of a District Board. The previous sanction of the Governor-General was refused to the introduction of a non-official Bill to amend the United Provinces Municipalities Act, 1916, by restricting the slaughter of cattle and providing for the acquisition of pasture lands.

The latest year for which detailed information concerning the actual working of local bodies in the Provinces is available is that for the year 1928-29. In Assam, considerable progress continued to be made by all the Municipalities, especially in such matters as water-supply, road building, and sanitation. The expenditure on education decreased. The general financial position of the Boards was on the whole satisfactory, but nine municipal institutions were in debt to the Government at the close of the year, the Sylhet Board to the extent of Rs. 70,755 exclusive of interest. The total receipts of the Boards in the Province fell from Rs. 37,56,073 to Rs. 37,31,257, and the total expenditure from Rs. 38,46,401 to Rs. 38,39,769. The village courts and *panchayats* continued to be popular and did useful work particularly on the civil side.

The financial position of the Municipalities in Bengal, which had become serious in previous years owing to the accumulation of arrears, deteriorated still further during the period under review. Howrah had outstanding balances of over Rs. 6½ lakhs for which no explanation had been given and Dacca had arrears to the extent of over Rs. 2 lakhs, owing mainly to difficulties arising from civil litigation. In 9 other Municipalities the unrealised balances exceeded Rs. 25,000. The reluctance of municipal authorities to face unpopularity by realizing the full dues of the year through distraint, when necessary, is largely responsible for these heavy accumulations of unpaid taxes. Another disquieting feature has been the increase in remissions of rates, which now amount to a total of Rs. 3·37 lakhs, having risen by the large figure of Rs. 75,000 during the year. The total expenditure on urban water-supply showed a falling off, which is regrettable. But des-

pite these adverse factors, the future of municipal administration of Bengal need not be regarded altogether pessimistically, in view of the widespread public interest that is displayed in the municipal elections and in the encouragement of such matters as the improvement of public health. During the year under review there were 82 local boards in the Presidency, with a total of 1,343 members. Union Boards in several Districts continued to maintain free primary schools and some new schools were established during the year. The District Boards are on the whole functioning satisfactorily and assisting in the promotion of rural well-being.

Municipal administration in Bihar and Orissa during the year 1928-29, as during the previous year, displayed no features of particular interest. The tax collections continued to be unsatisfactory although there was a slight increase in income. The root cause of the comparative stagnation of municipal work in the Province is poverty, which is also to a large extent responsible for the mal-administration which undoubtedly exists. The number of Municipalities remained the same as the previous year, namely 61, and there were 53 elected chairmen. The aggregate income of all Municipalities excluding opening balances rose during the year from Rs. 35,69 lakhs to Rs. 36·97 lakhs. Arrears in tax collections increased from Rs. 5·20 lakhs at the beginning of the period covered by our previous report to Rs. 5·58 at the beginning of the year 1928-29, and the outstanding balances increased from Rs. 6·04 lakhs to Rs. 6·66 lakhs. No loss than 26 Municipalities had arrears to the extent of more than one-fifth of their current demands when the year closed. Two Municipalities, namely those of Thalda and Tikari, closed the year with uncollected arrears amounting respectively to 63 and 70 per cent. of their current demands. The defective conditions of the roads, drainage, water-supply, and public health services still continued to be the subject of criticism by inspecting officers, and seems to be due as a rule to the absence of reliable supervision. Under the Local Self-Government Act, the Government of Bihar and Orissa, is,—as we have already indicated,—empowered to constitute Union Committees for dealing with certain matters such as roads and education in small areas, but these committees have been gradually disappearing since the enactment of the Bihar and Orissa Administration Act of 1922; during the period covered by our previous report there were only 34 Union Committees in existence, and during

1928-29, 4 of them were converted into Union Boards. The total number of Union Boards working during the year was 48.

In the Bombay Presidency, including Sind, there was no change in the number of District and Taluka Local Boards, nor in their constitution, during the year. The administration of the superseded District Local Board at Sholapur continued to be in the hands of the Collector. Elections were held in Sind and in the Central and Southern Divisions. The number of voters who exercised their right of franchise in Sind was satisfactory, but the results in the other parts of the Presidency were disappointing. The report states that questions of administration played little part in the elections and that the results still depended largely on communal, caste, or personal considerations. 21 Taluka Boards did not hold the prescribed minimum number of meetings during the year, and in Sind the facilities provided under the Bombay Local Boards Act for transacting business by circular were excessively resorted to. The aggregate income of the Boards during the year, excluding opening balances and debt, decreased from Rs. 1,98,33,901 to Rs. 1,96,59,304, and the aggregate expenditure chargeable to current income decreased from Rs. 2,00,39,374 to Rs. 1,93,40,189. The aggregate closing balances of all the Boards amounted to Rs. 44,40,776 as against Rs. 43,55,478. In most cases these closing balances were in excess of the prescribed minimum. There was a satisfactory extension of primary education in certain areas, the number of primary local board and aided schools in the Bombay Suburban Division having risen from 41 and 18, to 46 and 21 respectively, and the average number of pupils on the roll from 3,409 to 5,692 as compared with the previous year. Another satisfactory feature was the number of wells which were constructed by District Local Boards during the year. There are no village *panchayats* in Sind or the Bombay Suburban Division and in the other divisions the *panchayats* did not on the whole show any improvement. Serious administrative irregularities were disclosed in the Poona District and in the East Khandesh District, and irregularities in audit were fairly widespread throughout the presidency, especially in the Central and Northern Divisions. It is however universally recognised that the financial resources of the Local Boards are generally inadequate to meet their needs; as a result of the development of motor transport and the general rise in the standard of living that has resulted from the spread

of education, greater demands are being made on these bodies by the public every year, particularly in connection with the construction of roads, bridges, and causeways, the provision of water-supply, and education; and in addition, they must be able to pay salaries sufficiently high to secure competent and trustworthy officials. The difficulties which confront them are therefore great and it is under present financial circumstances useless to look to the Government for increased grants. As regards the Municipality of the City of Bombay, the income for the year was Rs. 3,15,33,383, a decrease of Rs. 1,74,905 from that of the previous year, while the expenditure amounted to Rs. 3,27,50,278. The year's transactions thus resulted in a deficit of Rs. 12,16,895. This is the third time during the last decade in which a deficit has occurred, and on this occasion it was the largest recorded since 1865. The receipts from the general tax, the water tax, the *halalkhore* tax, the wheel tax, the fire tax, and property taxes all declined.

In the Central Provinces,* the number of municipal committees remained the same as in the preceding year, namely 66. General elections were held in 40 municipalities and were in most cases keenly contested; the average percentage of voters attending the poll being 66·4 per cent. All the municipal committees except 4 held the prescribed number of meetings, but the total decreased from 1,653 to 1,622. The number of meetings which proved abortive for want of a quorum fell from 268 to 188. The total income of the committees,—excluding opening balances, and extraordinary and debt heads,—which has been rising steadily in recent years, showed a further increase, being Rs. 70,01,000 as against Rs. 67,34,000. The increase was in large part due to a rise in the extent of Government contributions, which amounted to Rs. 7,73,000 as against Rs. 5,16,000, but the income from taxation also increased by nearly Rs. 1½ lakhs. Unfortunately, however, the actual collection of taxes, which had been unsatisfactory during the previous year, deteriorated still further during 1928-29. The number of financial irregularities disclosed fell from 3,852 to 3,178, but there has been little improvement in the general state of accounts of local bodies. Nine committees closed the year with a balance less than the prescribed minimum, and many others only escaped doing so by having considerable sums on account of un-

* Particulars for Burma during the year 1928-29 were not available at the time of writing.

spent Government grants in their balances or by appropriating some portion of special funds. It was also recorded that the administration of several Municipalities continued to be marred by party factions, communal differences being pronounced in two Districts, particularly in Katni, while personal or party dissensions interfered considerably with the administration in 11 other Districts. There was no change in the constitution of the District Councils or Local Boards during the year. All of the District Councils except one and all the Local Boards except 20 held the prescribed number of meetings, whose total amounted to 806 as against 797 in the previous year. Of these 79 proved abortive for want of a quorum. The year opened with a balance of Rs. 22,08,049 and the total receipts from all sources amounted to Rs. 96,94,912. The expenditure was Rs. 88,93,206 and the closing balance was Rs. 30,09,755. The total number of recorded financial irregularities and embezzlements fell from 4,842 to 3,543. The Local Audit Report however again makes gloomy reading and shows that there was no appreciable improvement in the general state of accounts. A regrettable and unusual feature of the year's working was the strained relations which existed between some of the District Councils and their Local Boards. During the year 135 new village *panchayats* were established.

In the Madras Presidency, the total number of District Boards was 25, of which 21 possessed elected presidents at the close of year. The total number of Taluka Boards in the Presidency was 129, and all were presided over by non-officials. There were 460 Union Boards with an aggregate membership of 5,025 at the close of the year. At Alandur in the Chingleput District a new Union Board was constituted and the Karaikudi Union Board in the Ramnad District was converted into a Municipality. Three Union Boards did not function during the year and 7 others, including the one at Veravasaram in the West Godavari District that was not functioning in 1927-28, were abolished. The Ellore Municipal Council was superseded for a year, its administration being placed in the charge of a special officer appointed by the Government, and the Anakapalle Municipal Council was superseded for a period of 2 years owing to inefficiency. The Kistna District Board was dissolved and placed under official control.

In the North-West Frontier Province there was no change in the number and constitution of Municipalities and notified areas.

199 meetings were held as against 194 in the previous year. The attendance of non-official members of municipal committees was generally good except in Peshawar and Tank. The total income of the Municipalities was Rs. 16,27,123 as against Rs. 15,30,601, and the total expenditure Rs. 15,18,248 as against Rs. 15,07,073. The constitution of the District Boards also remained unchanged. The total number of meetings held was 29 as against 26, and no meetings were adjourned for want of a quorum. The income and expenditure for the year amounted to Rs. 14,17,927 and Rs. 13,82,512 respectively, as compared with Rs. 14,66,609 and Rs. 11,44,424 in the previous year. The audit of the District fund accounts revealed no serious irregularity.

In the Punjab, the number of Municipalities was 107, an increase of 1 as compared with the previous year. General elections were held in 18 Municipalities and the contests are reported to have been keen. But although elections were keenly contested when the polling station was reached there was still a tendency for matters to be settled by negotiation beforehand; in the Multan Division, for example, where 5 general elections took place, only 3 seats altogether in 2 of the 5 Municipalities reached the stage of a poll. The general administration of municipal affairs, which has given cause for disquiet for some years, was particularly unsatisfactory during the year under review. In the Ambala Division, particularly in the Hissar District, it is said that members of municipal committees are practically always actuated by personal and communal motives and seldom take a broad and liberal view of their civic duties. From the Lahore Division, also, the reports were far from encouraging; personal and party motives are said to predominate and rules and regulations to be constantly enfringed; new posts are frequently created, and premature increments given, without due regard to the financial position, with the result that nearly half of the committee's income was spent during the year under review on establishment to the detriment of other needs such as sanitation and lighting. In the Rawalpindi Division, the municipal committee of Murree and the notified area committee of Phularwan were singled out as exceptions to the general rule that the working of the committees is marred by party feelings and lack of public spirit; but the state of affairs in Miani Municipality was particularly unsatisfactory; up to the middle of August 1929, the committee had not yet submitted its budget for

the financial year 1929-30, and had liabilities to the extent of over Rs. 10,000 which it had made no attempt to meet. In the Multan Division, however, conditions were more encouraging and a better spirit prevailed. The total income of the Municipalities of the Punjab, including opening balances, sale proceeds of Government securities, withdrawals from Savings Banks, loans, advances and deposits, amounted during the year to Rs. 171·83 lakhs, as against Rs. 176·5 lakhs in the previous year, and the total expenditure was Rs. 134·66 lakhs as against Rs. 138·44 lakhs. The total closing balances therefore increased from Rs. 26·56 lakhs to Rs. 27·41 lakhs. A period in which, after some years of drawing on balances, the income exceeded the expenditure might be thought to indicate that an era of prosperity had opened. The report however suggests that this is not the correct conclusion, and that financial stability was attained less by wise husbanding of resources or successful development than by starving essential services and adherence to a very low standard of municipal administration. The audit notes received by the provincial Government consistently emphasize that the funds of the local bodies are on the verge of a catastrophe, and it is suggested that this state of affairs is due to the fact that the urban tax-payer has not yet realised, owing to the survival of the tradition that taxation levied on a town is some form of tribute exacted by an overlord, that under modern conditions taxation is merely a form of co-operative contribution to expenditure for the common good of the inhabitants. For several years the incidence of taxes per head of the population in municipal towns in India has been approximately Rs. 4·25 *per annum*, which is infinitesimal in comparison with that of other countries; in Great Britain and the United States of America, for instance, the rate is between 100 and 150 times greater, and in Eastern and Southern Europe and in Japan it is at least 15 or 20 times greater. As regards the District Boards in the Province, the position was also on the whole far from satisfactory. General elections were held for 8 District Local Boards and there have been large numbers of uncontested seats; in Montgomery, for example, only 8 seats out of 24 were contested. On the other hand, however, such contests as did occur were keen; moreover, although the number of meetings held continued to decline,—largely as a result of an endeavour to economize on travelling allowances,—no falling off was reported in the attendance of members nor in the interest displayed in the work; and the activi-

ties of sub-committees was everywhere commended. The total income of all boards, excluding opening balances, was Rs. 212 lakhs as against Rs. 211 lakhs in 1927-28, and the total expenditure amounted to Rs. 213 lakhs against Rs. 220 lakhs. It is indicated that the financial affairs of the District Boards are approaching a crisis. Their activities have increased remarkably during the last two decades and the pace has gathered impetus every year, particularly since 1920; large establishments of employees on incremental scales of pay have been installed, and it does not seem to have been sufficiently realised that with a rapidly expanding *cadre* the lower grades are usually filled with young men and the increased expenditure on the increments of these people is not set off by an equivalent number of retirements among the older employees.

The administration and finances of the municipal and other local bodies in the United Provinces during the year under review were also on the whole far from satisfactory. The number of Municipalities remained the same, and there have been few changes worthy of remark in their constitution during recent years, except in the numbers of official and nominated members; in 1925-26 there were 41 official members in 28 out of 85 boards, while during the year under review only 13 boards were left with any official element, the total number of such members being 19. The triennial elections which took place in December 1928 were on the whole keenly contested. A regrettably high proportion, namely 12 per cent., of meetings of the boards were adjourned; in Meerut, out of 74 meetings of the Board, 43 were adjourned,—18 for want of a quorum,—while the percentage of attendance of all members was only 49, and the state of affairs at Lucknow and Benares was not much better. On the other hand, the Agra Board got through its business in 29 meetings with only one adjournment. Excluding extraordinary items and opening balances, the total income of all municipalities was Rs. 161·01 lakhs. There was a slight improvement in tax-collection between 1926-27 and 1928-29, the percentage having risen from 79·93 to 82·24 of the demand. The number of Boards which failed to collect 70 per cent. of their demand in none of these years exceeded 13 out of 85. A striking instance of inefficiency in collection was however found at Hardoi, where there were arrears of taxes amounting to over Rs. 12,000 and Rs. 9,000 respectively on lands and houses, and on professions

and trades, with the result that not even the current demands were collected. The expenditure of Municipalities has risen steadily during the last few years, having amounted to Rs. 177·16 lakhs in 1928-29 as against Rs. 154·02 lakhs in 1925-26. There was however a slight increase in the number of boards whose accounts were deemed to be satisfactorily kept, and amongst these Allahabad and Cawnpore were for the first time included. Lucknow and Bareilly also showed some improvement in this respect, but of the remainder, including Agra, Benares and Meerut, the accounts continued to be characterised as bad or unsatisfactory. Embezzlements were detected in 16 Municipalities during the period under review. Apart from the keeping of accounts, however, the actual financial condition of the majority of Municipalities in the Province was very bad. In Allahabad, it is true, a real effort has been made to improve the finances of the Board, but at Agra, Meerut, Lucknow, Benares, Muttra, Kairana, Bulandshahr, Jhansi, and several other towns the position was very disquieting if not positively precarious. For some years most of these Boards have been living on their reserve funds, and these are becoming exhausted,—a fact which is particularly serious since their finances are comparatively inelastic and the amounts they are capable of raising insignificant. As regards the District Boards in the Province, the total number of meetings has risen considerably during recent years, having been 851 in 1926-27 and 1,004 in 1928-29, but during the latter year as many as 179 meetings proved abortive for want of a quorum; in Sultanpore no less than 42 out of 50 meetings were adjourned, and the percentage of members attending was only 32; 6 other boards were also recorded as having either an unnecessarily large number of meetings, or of adjournments, or of both. No improvement was recorded in the work of *tahsil* committees, whose existence in most Districts continued to be merely nominal; but departmental committees on the other hand were reported to have been of real assistance to the Boards. The total income of the Boards during the year was Rs. 191·85 lakhs as compared with Rs. 192·45 lakhs in the previous year and Rs. 196·15 lakhs in 1926-27. During the same three years the total expenditure rose from Rs. 191·41 lakhs to Rs. 208·69 lakhs. Among the causes of this rise has been a very rapid expansion in expenditure on education and on medical services. Owing to the fact that expenditure exceeded income during 1929 by the alarmingly wide margin of

Rs. 16·84 lakhs, the balance at the absolute disposal of the Boards was very small,—amounting as it did to only Rs. 3·51 lakhs,—and no less than 18 Boards showed a deficit; at Allahabad, Bahraich, and Budaun the deficits amounted to Rs. 75,000, Rs. 67,000 and Rs. 44,000 respectively. In many places the stage has now been reached at which the diminution of reserves, the increase of expenditure and the inability to undertake drastic economies cannot be continued without the Boards failing to be able to perform their statutory functions for sheer lack of funds.

Of the various means whereby the circumstances of the poorer classes of the population, particularly in rural India, are being improved, one of the most important and successful has been the development of Co-operative Societies, whose progress during the last two decades has been very remarkable. The Co-operative Movement in India originated about twenty-four years ago, and in 1908-09, when it was still in its infancy, the total number of societies in the whole country was under 1,500; by 1927-28, however, it had increased to approximately 96,000,* and the working capital of these bodies amounted in the aggregate to nearly Rs. 77 crores. Of recent years, capital has been increasing faster than membership, and now amounts to about Rs. 203 per member; the average membership per society stands at 39, and the number of societies and the amount of working capital has increased without check during the whole twenty years. The primary object of the Movement is to encourage thrift by collecting small shares, receiving deposits, and persuading members to make compulsory contributions for special purposes; and among the various types of society included under it are central and provincial banks and banking unions, supervising and guaranteeing unions, re-insurance societies, and agricultural and non-agricultural societies. The development of the agricultural non-credit societies, in particular, has been very rapid during recent years, and the range of their functions is wide, including as it does arrangements for the general sale of agricultural produce, the production and sale of implements and manures, the furtherance of irrigation projects, the consolidation of holdings, the opening of dispensaries and schools, the maintenance and construction of roads, and the rendering of assistance to the Agricultural Departments in spreading knowledge of improved methods of cultivation.

* The figure for British India alone during the year was 87,286, as against 76,371 in the previous year.

Turning now to the actual working of the Co-operative Societies in the Provinces of British India during the year 1928-29, we find that in Assam the number of societies of all kinds registered during the year was 136, as against 150 in the preceding year. 13 old societies were dissolved, giving a net increase of 123 societies. The total number of societies increased from 1,197 to 1,320, the membership from 60,755 to 66,955, and the working capital from Rs. 54,28,055 to Rs. 64,62,671. There were 15 central banks as in the previous year. The number of societies affiliated to central banks increased from 917 to 1,031, and the working capital of the central banks from Rs. 13,80,389 to Rs. 16,38,752. The loans issued to the affiliated societies amounted to Rs. 4,78,023 against Rs. 5,09,134. The number of agricultural credit societies increased from 1,119 to 1,232, their membership from 48,117 to 52,924, and their working capital from Rs. 22,47,285 to Rs. 7,25,87,935. Loans issued to members decreased from Rs. 7,99,883 to Rs. 7,93,788. The number of non-agricultural credit societies increased from 40 to 47, the members from 8,372 to 9,382, and the working capital from Rs. 14,00,247 to Rs. 17,24,328. New loans issued to members rose from Rs. 6,30,396 to Rs. 7,45,952. The expansion of the Co-operative Movement in the Province thus continued to be steady during the year, though not spectacular. The full Board of Development met once and recommended the establishment of co-operative milk unions in towns and co-operative milk supply and cattle-breeding societies in the interior. An agricultural inspector was placed on special duty in the Surma Valley for the organization of milk supply societies.

In Bengal, the total number of societies at the end of the year was 19,877,—an increase of 1,770, or 9·7 per cent., as against 17·12 per cent. in the previous year. The number of members rose from 635,959 to 706,572, and the total working capital from Rs. 11,10,01,532 to Rs. 12,88,20,317. The Bengal Provincial Co-operative Bank continued to be efficiently managed during the year. Its membership increased from 159 to 163, and the working capital from Rs. 135·05 lakhs to Rs. 171·90 lakhs. There was a slight rise in the reserve funds. The number of central banks increased from 110 to 112, and the number of affiliated societies from 15,568 to 17,019, while working capital increased from Rs. 350·63 lakhs to Rs. 392·76 lakhs. The number of agricultural credit societies,

including grain banks, increased from 15,689 to 16,930, and the working capital from Rs. 377 lakhs to Rs. 421 lakhs. The percentage of credit societies to the total number of societies of all kinds rose from 81·1 to 85·1. The number of non-agricultural credit societies increased from 358 to 410, their membership from 119,918 to 148,028, and the profits earned from Rs. 6·81 lakhs to Rs. 7·78 lakhs. The dividends payable to shareholders were however restricted to the maximum of 12½ per cent. The number of societies other than credit societies increased during the year from 85 to 100, and their membership from 26,867 to 28,982. Among the societies organized for marketing agricultural produce in Bengal, the most important, naturally, is the group of societies established for the sale of jute. The work of these bodies was carried on under the direction of the Bengal Wholesale Co-operative Society, which was in charge of the selling arrangements and earned a profit of Rs. 38,026. The movement for co-operative marketing of paddy was stimulated by the organization in the previous year of a Central Paddy Sale Society in Calcutta, which disposed during the year under review of over Rs. 3 lakhs worth of paddy and made a small profit. The total number of irrigation societies in the Province, which were confined mostly to Western Bengal, rose from 525 to 773 during the year, and their membership from 15,195 to 20,133. The number of milk societies rose from 123 to 169. The co-operative society at Naogaon established for the sale of *ganja* and *bhang* continued to prosper, and also to undertake a number of interesting philanthropic activities such as the establishment of dispensaries and educational institutions. Among the other non-credit societies in the Province were stores and supply societies, weavers' societies, silk societies, artisans' societies, house-building societies, fishermens' societies, and anti-malarial and public health societies, and, in addition, the Bengal Co-operative Organisation, which undertakes general propaganda and organization on behalf of the Movement as a whole.

In Bihar and Orissa, the Co-operative Movement continued to progress on sound lines during the year. The number of societies of all descriptions increased by 601 to a total of 9,188, the membership by over 12,000, the working capital by nearly Rs. 63 lakhs, and the profits by Rs. 1·2 lakhs. The working capital of the Bihar and Orissa Provincial Bank, which is the most important co-opera-

tive bank, rose during the year from Rs. 57 lakhs to Rs. 66 lakhs, and its gross profits from Rs. 77,000 lakhs to Rs. 102,000 lakhs, which is the highest figure yet attained. The number of central banks increased by 2,—the total now being 67,—and the proportion between owned and borrowed capital improved. There was a decrease of Rs. 3 lakhs in deposits by *zamindars*, and a considerable rise in deposits by smaller agriculturists, which is a healthy sign. By the end of the period under review most of the banks had reduced their rate of interest to 6 per cent. Apart from their financial improvement, as many as 48 central banks made considerable progress in the development of agricultural activities by means of propaganda and demonstration work, and the distribution of improved seeds and agricultural implements and fertilisers. As regards the agricultural societies, the marked improvement in the standard of efficiency which was noticeable during the previous year was maintained. A wholesome measure of control continued to be exercised over the starting of new societies, but, despite this, the general improvement in the state of the Co-operative Movement enabled 598 new agricultural societies to be started during the year, bringing the total number up to 8,532. The share capital of these societies increased by Rs. 1½ lakhs and the reserves by Rs. 4¼ lakhs, and the profits amounted to nearly Rs. 4½ lakhs. Bad harvests were, however, responsible for a fall in the collection of loans due from societies to central banks from 68·2 per cent. to 64·9 per cent. The working of non-agricultural societies was also satisfactory during the year, the number having increased by 4 to 77, and the profits by Rs. 11,000, the total earned profit during the year being Rs. 1·05 lakhs on a working capital of Rs. 22 lakhs.

In the Bombay Presidency, the policy of weeding out improvident members from societies and cancelling bad societies was continued throughout the year, and consequently but few new societies were registered. Climatic conditions also tended to check the growth of the Co-operative Movement, especially in Gujerat, where the sudden frost in February 1929 almost completely destroyed the principal money crops. The total number of societies amounted to 5,364 as compared with 5,223 in the previous year, and membership increased from 539,470 to 548,634. The total working capital of the socities increased by nearly Rs. 75 lakhs and now amounts to the impressively large total of approximately Rs. 12

crores. The reserve funds increased by no less than Rs. 10 lakhs to Rs. 80½ lakhs. The number of agricultural credit societies rose from 4,177 to 4,317, but the membership and the working capital both decreased slightly. The total amount of unauthorised arrears was Rs. 95¾ lakhs out of Rs. 318 lakhs due for repayment during the year. It is interesting to note that out of the 4,317 agricultural credit societies, as many as 1,647 had no overdue arrears, and there were 490 societies with arrears of less than 10 per cent. Thus nearly 50 per cent. of the societies had arrears of less than 10 per cent. and the main structure of the Co-operative Movement in the Presidency was clearly sound. The majority of the bad societies were concentrated in a few Districts, which are either notoriously liable to famine or else had been subjected to some unusual calamity. The number of agricultural non-credit societies decreased from 257 to 251. This side of the Movement presents special difficulties since most of these undertakings,—particularly the sale societies,—are commercial enterprises and thus exposed to ordinary trading risks. The land improvement, the fencing, and the cattle-breeding societies all on the whole made some progress during the year. The policy of increasing the number of supervising unions is being continued. Out of the 4,317 agricultural societies, as many as 2,079 have been affiliated to the various supervising unions. The Bombay and Provincial Co-operative Bank continues to be a model institution. 3 more branches were opened, bringing the total number to 22. The bank financed 1,182 societies through its head office and branches and engaged a staff of 30 inspectors. The total deposits held by the branches at the end of the year stood at Rs. 26·47 lakhs. The working capital increased from Rs. 247 lakhs to Rs. 265 lakhs, and the reserve funds from Rs. 3·78 lakhs to Rs. 4·41 lakhs. The number of non-agricultural credit societies in the Presidency rose from 516 to 535. The percentage of arrears in these societies is only 11·4. No improvement was recorded in the consumers' movement,—the number of societies being further reduced from 38 to 35,—and only a very few stores worked satisfactorily. The number of housing societies, however, rose from 52 to 56, and generally speaking they achieved good results. With a very few exceptions, almost all the producers' societies worked at a loss and have failed even more markedly than the consumers' stores. The failure seems to be due either to ineffi-

ciency of management or to the absence of any real aptitude for collective action.

In Burma, the condition of the co-operative societies has for some years been very unsatisfactory, and during the period under review was the subject of a special enquiry by a body known as the Committee on Co-operation in Burma. This Committee was constituted as a result of a resolution by the provincial Government which read as follows:—" In recent years the number of co-operative societies and the number of members have ceased to expand and there has even been some decline. The primary agricultural credit societies in several Districts of the Province, especially in Districts where the Provincial Co-operative Bank lends directly to the primary credit societies, have fallen into arrears of interest due to the central banks and have almost ceased to make payments of principal. In consequence of these defaults, the Government has been obliged to come to the assistance of the Provincial Co-operative Bank and to increase temporarily the number of officers in the Co-operative Societies Department, in order to deal with the large amount of work involved in winding up and disregistering the primary agricultural credit societies which have ceased to be creditworthy, and in order to tighten the control of Government officers over the remaining societies. Meanwhile, there has been no compensating progress in other branches of co-operative business. . ." The Committee first assembled in November 1928 and during 1929 submitted a report to the Government which contained a number of recommendations for restoring confidence in co-operative organization in the Province. The majority of these resolutions were accepted. The deplorable condition of the co-operative societies in Burma is indicated by the fact that, during the period of the Committee's investigations, no less than 1,400 out of the 3,800 primary agricultural societies were in liquidation. The chief cause of this state of affairs was the failure of the system of establishing supervising and guaranteeing unions. It was recorded that at one stage of its investigations, the Committee, realising that it was faced with a widespread collapse of the co-operative credit movement, was forced to consider whether the attempt to foster these institutions under the auspices of Government should be abandoned altogether, since " there is undoubtedly ground for serious doubt as to whether these little village financing institutions, dependent on the spirit of

self-help and mutual interest, are really suitable to the people of Burma."

In the Central Provinces, bad harvests, especially in the North, caused a fall in the recoveries of advances made by the central banks to rural credit societies, the figure being Rs. 14,03,618 as compared with Rs. 14,32,512 in the previous year. In Berar, however, recoveries rose from Rs. 17,17,966 to Rs. 19,31,292. The total loans to rural credit societies increased from Rs. 57,16,373 to Rs. 58,69,039 in the Central Provinces, but decreased from Rs. 83,10,948 to Rs. 83,08,102 in Berar. Taking renewals and over-dues together, the total arrears decreased from Rs. 75,64,148 to Rs. 73,99,545. The number of co-operative societies of all kinds declined from 4,049 to 3,954, which resulted in a reduction of 3,657 in the total membership. In addition, 9,970 members of working societies and of societies under liquidation, who have hitherto been included in the figure of membership, were excluded, the total consequently being 132,609 as against 140,236 in the previous year. The working capital increased from Rs. 4,78,46,078 to Rs. 5,06,86,392. The number of central banks fell from 36 to 34, but their total working capital increased from Rs. 2,14,46,463 to Rs. 2,26,36,280. The net profits for the year amounted to Rs. 3,81,560 as compared with Rs. 4,00,624 in the previous year. The working capital of the Provincial Bank increased from Rs. 89,85,557 to Rs. 1,02,79,327, but profits decreased from Rs. 56,009 to Rs. 46,557. The number of rural credit societies with unlimited liability fell further from 3,891 to 3,787. 149 new societies were registered, but the registration of 253 others was cancelled. The working capital of the societies, excluding those under liquidation, increased from Rs. 1,62,09,459 to Rs. 1,62,46,777. The number of non-agricultural credit societies with limited liability increased from 21 to 26 owing to the registration of 5 new clerks' societies, and the number of non-agricultural societies for purposes other than credit increased from 8 to 11.

In the Madras Presidency, seasonal conditions contributed to the improvement in collection in the Circars, except Vizagapatam and Godavari, but there was an increase in arrears in the Ceded Districts. It was decided that in Districts with heavy over-dues new societies should deal only in short-term loans; the organization of the new societies was therefore considerably restricted and only

726 societies were registered, as against 1,200 in the previous year. At the end of the year the total number of co-operative societies in the Presidency was 15,086, of which 12,947 were agricultural. The number of members in all the societies, apart from the 448 unions included amongst them, was 940,748. The percentage of membership to the total population of the Presidency was 2·1. The total working capital employed, excluding the investments of one society in another, amounted to Rs. 908·69 lakhs, as against Rs. 820·94 lakhs in the previous year. There was a marked improvement in the payments by primary societies to central banks, the percentage of overdues falling by 3·17 per cent. under principal and ·42 per cent. under current interest. The number of district federations was 25, as compared with 19; to make their work in co-ordinating and supervising the activities of the several units more effective, they were required to pool all supervision funds, to combine their staff into a District *cadre*, and to employ a chief executive officer for each District. The Provincial Co-operative Union has gradually strengthened its position as a non-official centre of all kinds of co-operative activity, and has recently developed into a propagandist and teaching body, having been brought into co-ordination with the training institutes. 5 of these institutes were working during the year and 612 candidates underwent training in them. 34 local supervising unions were registered during the year, bringing the total up to 448; the number of societies affiliated to them was 12,383 and their membership 790,713. Trading activities were carried on both by agricultural and non-agricultural societies, which purchased and sold goods to the value of Rs. 26·55 lakhs and Rs. 28·03 lakhs respectively, as compared with Rs. 25·42 lakhs and Rs. 26·67 lakhs in the previous year. Included amongst the various societies in the Presidency were 63 labour contract societies, 10 land reclamation societies, 21 land mortgage banks, 17 irrigation societies, and 31 milk supply societies. The progress of the 31 District central banks during the year was satisfactory, the working capital, the deposits, the paid-up share capital, and the reserve funds having all increased. This was also true of the Madras Central Urban Bank, but its net divisible profit fell from Rs. 2·61 lakhs to Rs. 1·35 lakhs owing to the depreciation in the value of Government paper. As regards the agricultural credit societies as a whole, their total number increased from 11,966 to 12,382, their

working capital from Rs. 574 lakhs to Rs. 617 lakhs, and their reserve funds from Rs. 33·13 lakhs to Rs. 39·47 lakhs. The progress of the non-agricultural credit societies was also substantial, the working capital having increased from Rs. 217·6 lakhs to Rs. 239·8 lakhs. The total reserve funds of all the societies in the Presidency amounted to Rs. 97·24 lakhs, as compared with Rs. 82·18 lakhs in the previous year.

In the North-West Frontier Province, the Co-operative Movement developed remarkably during the year. The total number of societies increased from 60 to 101, and that of members from 2,236 to 3,938, while the working capital rose from Rs. 3,57,036 to Rs. 6,17,963. A whole-time assistant registrar for the Province was appointed in April 1929, and the sanctioned strength of the inspectorial staff increased from 12 to 27.

The progress of the Co-operative Movement in the Punjab in recent years has been very satisfactory. In 1920 the number of societies of all kinds was 5,088; in the year ending on the 31st July 1929 it had risen to 19,462,—having been 18,063 in the previous year. Membership, which in 1920 totalled 168,306, had risen from 576,052 to 641,427; and the working capital, which in 1920 amounted to Rs. 2,32 lakhs, had risen from Rs. 14,14 lakhs to Rs. 16,05 lakhs. A satisfactory feature has been that membership has increased in larger proportion than societies, and capital in larger proportion than membership. Even more gratifying has been the marked increase in the variety of the societies. In 1920 the activities of the Movement were almost entirely restricted to credit and supply, but they now embrace practically all the economic interests of the people. The magnitude and success of the movement is clearly indicated by the fact that whereas in 1920 primary societies lent Rs. 54 lakhs to their individual members and recovered Rs. 44 lakhs from them, the corresponding figures for the year 1927-28 were Rs. 3,31 lakhs and Rs. 2,29 lakhs, and those for the year 1928-29 were Rs. 3,49 lakhs and Rs. 2,45 lakhs. A remarkable feature has been the expansion of the Women's Co-operative Movement; for although the number of societies only rose during the year from 112 to 128, the members increased from 1,691 to 1,977 and the working capital practically doubled, having amounted to Rs. 90,319 as against Rs. 46,285. The Punjab Co-operative Union is the main centre of co-operative activity in the

Province. During the year, in order to improve its financial position, the audit fee payable by every society was increased from 7½ per cent. of the annual profits to 10 per cent.* The Provincial Bank increased its share capital during the year from Rs. 9·25 to Rs. 10·30 lakhs and its working capital from Rs. 70 to Rs. 76 lakhs. The number of central banks increased from 46 to 48 and their working capital from Rs. 6,07 to Rs. 6,64 lakhs. The steady increase in deposits on a reduced rate of interest has clearly indicated the growth in the habit of investment and the increasing confidence in the Co-operative Movement. The central financing institutions of all kinds held nearly Rs. 1,40 lakhs of investments as compared with about Rs. 5 lakhs in 1920. One of the most important and fruitful results of co-operative organization in the Punjab during recent years has been the consolidation of holdings, —though during the period under review only 48,000 acres were consolidated as against 64,000 during the previous year. Progress among co-operative commission shops and sale societies continued to be slow. Weavers' societies with a few exceptions did not make much progress during the year, but reference to the figures for 1920 clearly indicated that a substantial advance has been made; in this period the membership had increased from 911 to 5,713 and owned capital from Rs. 21,579 to Rs. 1,40,643.

In the United Provinces, owing to poor harvests, the year was a bad one for co-operative societies. Moreover, it was evident that the superior staff was over-burdened with work, and that the auditors and supervisors generally, were not very efficient. The financial condition of the agricultural credit societies deteriorated, but there was nevertheless some extension in other forms of co-operative activity, as for instance in group conferences of *panchayats*, as a result of which one group bought several thousands of rupees' worth of cloth to distribute amongst their members, while another purchased fodder in bulk to meet local scarcity. There was also an improvement in the sowings of improved varieties of wheat and sugarcane as a result of co-operative effort. More than 300 ploughs and 100 maunds of artificial manure were used by co-operative societies in the Province. Adult education also developed, and at the end of the year there were 3 co-operative schools for women. Village aid dispensaries were opened in considerable numbers. The reorganization of credit societies continued, and during the year

enquiries were made into the financial condition of about 1,000 of them. Nearly 400 were liquidated, 250 were given further time for improvement, and the remaining 350 were rejuvenated. 119 new societies were registered, and the total share capital, working capital and reserve funds of the societies all increased. The position of the central banks was very serious since, owing to scarcity, they had advanced more loans, while at the same time being unable to maintain collections. The sums outstanding and overdue consequently increased considerably. The expenditure of 25 banks on establishment and interest payable on deposits exceeded receipts from interest on loans, and if the amount of uncollected interest is excluded from profits, these banks must be considered to have worked at a loss; moreover it appeared likely that many of them would fail to realize a large portion of the principal sums lent to societies which subsequently went into liquidation. The share receipts during the year amounted to Rs. 1·44 lakhs against Rs. 1·62 lakhs in the preceding year, and the paid-up share capital only increased from Rs. 23·25 lakhs to Rs. 23·53 lakhs. On the other hand the banks found little difficulty in obtaining Rs. 49·50 lakhs on deposit, a figure which is Rs. 5·23 lakhs more than that of the preceding year. If, however, the postponements are taken into consideration, the amount overdue to the central banks was nearly 36 per cent. of the sum outstanding, and the collections of the year amounted to only 57 per cent. of the principal demand, which clearly indicated that the financial position was precarious. The number of central non-credit societies increased from 4 to 10, the new societies consisting of 2 agricultural supply societies, a district co-operative physical culture association, a sugarcane sale union, and 2 societies started for the supply of raw materials to weavers' societies. The number of primary agricultural credit societies decreased from 5,697 to 5,390, and would have fallen below 5,000 if a large number of societies had not been given an opportunity for improving owing to the unusual agricultural depression. Membership declined from 137,000 to 127,000, but the average number of members per society remained at 24. Loan advances increased from Rs. 41·60 lakhs to Rs. 41·85 lakhs and amounts recovered decreased by Rs. 2¼ lakhs to Rs. 32·29 lakhs. As regards the primary agricultural non-credit societies, the total number of new registrations during the year was 26, consisting

chiefly of societies for adult education and rural reconstruction. The registration of the dairy at Benares was cancelled. Among the primary non-agricultural credit societies, the limited liability societies increased from 63 to 67, and those at Cawnpore did good work in releasing their members from the hands of money-lenders. The unlimited liability societies which are mostly societies of cottage industries, decreased from 197 to 176. Of the non-agricultural non-credit societies, the thrift societies and the housing societies were comparatively unsuccessful, and only one petty retail store showed satisfactory results; it was however proposed to open a new co-operative food store for the working classes in Cawnpore. The liquidations of societies amounted to 390 as against 225 in the previous year, and it was estimated that about double that amount would have to be liquidated in 1929-30. The total collections amounted to Rs. 3·43 lakhs of which Rs. 1·68 lakhs was realised in cash, as compared with Rs. 1·62 lakhs in the previous year. Members owed to societies Rs. 7·74 lakhs in principal and Rs. 5·42 lakhs in interest, while the outside liabilities of the societies amounted to Rs. 9·13 lakhs, of which Rs. 6·34 lakhs constituted principal and Rs. 2·07 lakhs interest due to central banks.

From this brief review of the Co-operative Movement, its magnitude and the value of its achievements, especially in rural India, will be readily apparent. Another important means whereby the condition of the masses is being improved is the development of accessory rural industries, which, in recent years, has been obtaining an increasing amount of attention from the Departments of Industries in the Provinces. As we have seen in Chapter IV, agricultural activities throughout most of this country can only be undertaken during a portion of the year, owing to the nature of the Indian climate and the seasonal distribution of the rainfall, and consequently, in the absence of alternative occupations, a large proportion of the rural population usually spends several months in enforced idleness. In view of the immense economic loss which is thus inflicted on the country as a whole, and of the urgent need,—for their own sakes,—of improving the standard of living and the productivity of the masses, the need for devising some method of altering this state of affairs has long been realised. The problem, however, is an immense one, and although the efforts which are being made by the provincial Governments through their Industries

Departments are undoubtedly proving of value, they naturally cannot be expected to yield widespread and immediate results. These Departments, of course, are by no means exclusively concerned with this particular question, but as industrial matters in general have been treated at some length in Chapter IV, we will confine ourselves here to describing briefly the development that occurred during 1928-29 in the encouragement of rural industries, and, *en passant*, the progress that was achieved in industrial and technical education.

In Assam, the activities of the Department of Industries were largely confined, as in previous years, to the encouragement of hand-loom weaving and sericulture. In both these two industries substantial progress was made. There were 3 weaving parties in the Province at the beginning of the year and a fourth party for Sylhet was subsequently organized. Expansion in sericulture took the new form of demonstration in the field, 6 demonstrators having been appointed. As regards technical and industrial education, the boys trained in the Fuller Technical School and the Fuller Industrial School found useful employment in Sylhet and Jorhat, which indicated that the youth of the Province was taking eagerly to fresh fields of manual work. In addition to the State technical scholar undergoing training in Great Britain, 5 stipendiaries were under instruction in miscellaneous industries outside the Province.

In Bengal, the Government Weaving Institute at Serampore, which was referred to in the previous edition of this Report, kept up its record of good work, though the upper classes started for women failed to attract students. In accordance with the decision of the Government that the report on the survey of cottage industries in the Province should be brought up to date quinquenially, a second edition of it was published during the period under review. The Bengal Tanning Institute continued to achieve good results in research, instruction, and demonstration in connection with the leather industry in the Province. As a result of its activities, the consumption of Bengal hides in the chrome tanning industry is gradually increasing, not only in this Province, but also in other parts of India. Successful propaganda work was also actively carried on. An average of 12 apprentices were under training during the year, and 5 out of the 6 who had completed their two-year course obtained the diploma. Apart from the work in this

institute, technical education in all its branches, including weaving, was given particular attention by the Department during the year. The total number of technical institutions, both public and private, rose from 127 to 147, and the number of pupils attending them from 5,525 to 6,422. The total expenditure, direct and indirect, incurred upon them increased from Rs. 11,15,750 to Rs. 13,83,173. At the Calcutta Technical School the number of apprentices on the roll in March 1929 was 141. The research undertaken by the engineering section maintained by the Department in connection with the drying of boiled paddy is an example of the useful work which it has been achieving, since, as a result of it, in the course of seven months, over 400 paddy-husking machines devised by the industrial engineer were sold.

In Bihar and Orissa, technical and industrial education continued to make satisfactory progress during the year. At the Bihar College of Engineering at Patna, there was a slight decline in the number of applicants for admission to the civil engineering classes, but the examination results continued to be satisfactory. The progress of the Orissa School of Engineering, the Tirhut Technical Institute at Muzaffarpur, and the Technical School at Ranchi was well maintained. The 13 aided schools in the Province, of which the most important are the Jamshedpur Technical Institute and the Jamalpur Technical School, also continued to show good results. The amounts contributed by the Government to the aid of these institutions amounted to Rs. 72,000 during the year. 3 State technical scholarships were awarded for training in foreign countries in electrical and textile engineering and in fuel technology, and 2 scholarships were awarded for training in the Indian School of Mines at Dhanbad and 2 in the Bengal Training Institute at Calcutta. In addition, 21 stipends were granted during the year for training outside the country in subjects such as leather, poultry-farming, dyeing, printing, and pottery. The work of the Cottage Industries Institute at Patna was very successful, the weaving schools having made a profit of over Rs. 10,000 after meeting the cost of demonstration and experiment. The total sale-proceeds during the year amounted to Rs. 1·32 lakhs, which represented an increase of nearly half a lakh over the figure for the previous year. The total value of goods despatched to the agent in England increased from Rs. 46,000 to Rs. 75,000, and a new foreign

agency has been started in New Zealand. The Bhagalpur Silk Institute also did useful work, and goods to the value of over Rs. 40,000 were sold. Some new designs were introduced, and manufactured goods were sent to exhibitions in different parts of the world. Samples were also despatched to firms in America, Canada, Germany, and New Zealand. The recently established wool-weaving institute at Gaya, for training the caste of hereditary wool-weavers in the use of improved appliances, has not so far been very successful, but as the experiment is an interesting one, the Government has sanctioned its continuance for another 5 years. The first important step in the development of the hand-weaving industry consists in the gradual replacement of the primitive hand-looms by fly-shuttle sleys, and with this object, the Department maintains 10 peripatetic demonstration parties which fit up hand-looms in the villages and exhibit the weaving of fine counts and new designs. During 1928-29, these parties fitted up 3,248 improved looms in 567 villages, taught weaving of new designs in 101 villages, and carried out dyeing demonstrations in 322 villages. The Department maintains a sericulture farm at Khunti in the Ranchi District where experiments have been made in mulberry cultivation and silk rearing, though hitherto without much success. "Ericulture", on the other hand, has made remarkable progress. In Orissa alone, owing largely to the efforts of some of the central banks, as many as 3,000 persons have taken up this pursuit; a central seed-supply station has been started at Netarhat for supplying disease-free seed throughout the Province. As regards fisheries, the Department has for some time maintained a centre for the distribution of carp-fry at Ghatsila, and has recently opened another at Patna. During the year the total amount of fry supplied amounted to 228,500, against 135,000 in the previous year. The Government has also had under consideration measures for conserving the fisheries in the Chilka Lake. The total cost of the Department increased from Rs. 8·61 lakhs to Rs. 9·42 lakhs, and the receipts increased by as much as Rs. 1·52 lakhs.

In the Bombay Presidency, the development of weaving schools and weaving demonstrations, which was transferred to the Department of Industries in 1928, was maintained. 7 weaving schools were run in different parts of the Presidency excluding Sind. One school was meant exclusively for agriculturists, and its function

was to introduce hand weaving as a spare-time occupation amongst the cultivators. Unfortunately, however, the interest taken in it, which had been gratifying at the beginning of the year, declined towards the end. In addition to the weaving schools, 9 weaving demonstrations were maintained to exhibit the work of fly-shuttle looms and other improved appliances in small villages. The only grant available during the year for expenditure upon the encouragement of the fishing industry was Rs. 1,000 for oyster culture in Sind. The Department continued to award scholarships for technical training, having granted 3 new scholarships for research in chemistry, and 2 for work in electrical engineering. The total expenditure incurred by the Department was Rs. 77,600 as against Rs. 69,400 in 1927.

In the Central Provinces,* the encouragement of the hand-loom industry in rural Districts was continued, and peripatetic parties visited about 270 villages and introduced 1,072 sleys and 12 warping machines. By the end of the year the total number of sleys and warping machines that had been introduced amounted to 13,650 and 150 respectively.

In the Madras Presidency, an amendment to the State Aid to Industries Act was passed during the year by the Legislative Council, making special provisions applicable to cottage industries and industrial enterprises with a capital outlay not exceeding Rs. 1,000, and it is hoped that the facilities for industrial development provided under the Act will henceforward be more extensively resorted to by the promoters of small industries. The textile section of the Department of Industries made considerable efforts to organize the cottage industry and place it on a sound commercial basis during the year. That its development will not necessarily prejudice the power-loom industry is evident from the fact that the development of cotton mills and of the hand-loom industry has progressed in India simultaneously since the War. The Textile Institute at Madras continued to impart theoretical and practical instruction on modern textile practice, and in March 1929 there were 52 students on the rolls. 6 peripatetic parties were at work during the year and continued to demonstrate to weavers, dyers, and cloth printers, the advantages of adopting the new appliances and methods. As re-

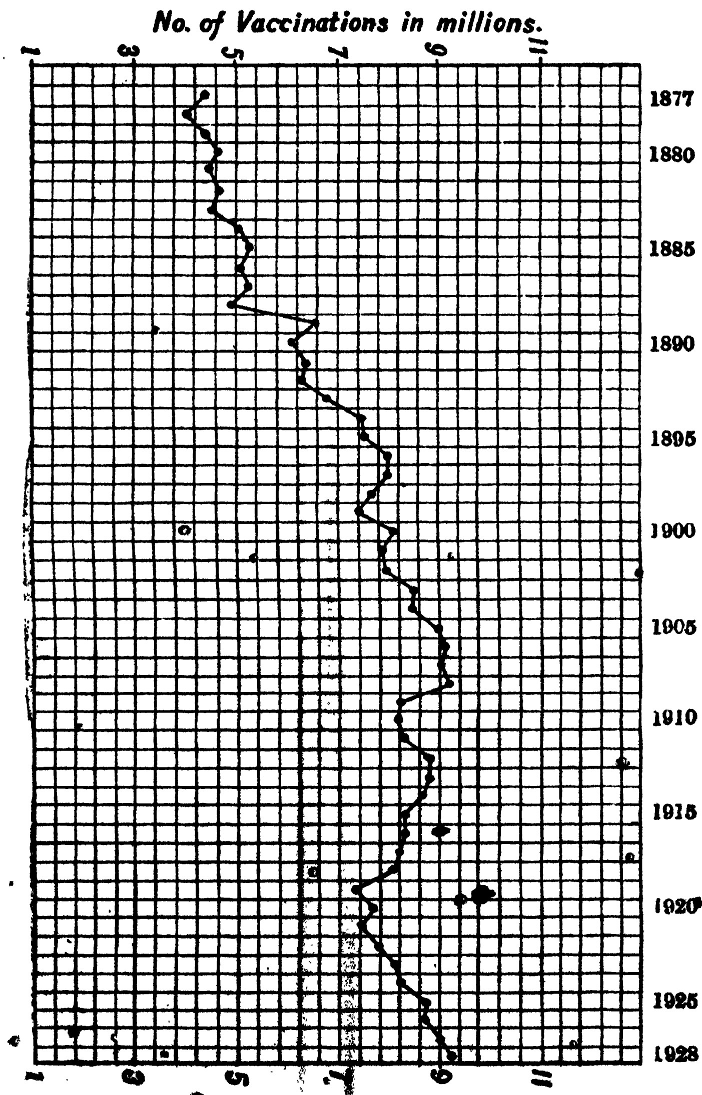
* Particulars of the condition of rural industries in Burma during 1928-29 were not available at the time of writing.

gards sericulture, all efforts to check the fungus infection at the Coonoor Silk Farm were unsuccessful, and the work of producing disease-free seed was transferred to Mathigiri. That the advantages of testing seed are beginning to be realised was demonstrated by the fact that the number of layings tested by the peripatetic party at work in the Presidency was more than three times the total of the previous year. A co-operative society was formed in one village during the year to assist rearers in the joint purchase of microscopes and other modern appliances. The 5 industrial schools in the Presidency continued to be maintained and the policy of encouraging industrial education by providing grants-in-aid for the building, equipment, and maintenance of private industries was continued. The number of aided schools increased from 58 to 61, and a sum of Rs. 94,797 was distributed; several scholarships were also awarded. The net cost of the Department of Industries was Rs. 12,48,414 as compared with Rs. 11,31,622 in the previous year.

During the year ending on the 31st March 1929, the work of the Industries Department in the Punjab was, as in the previous year, satisfactory. The expenditure on capital outlay for industrial development rose from Rs. 1,68,558 to Rs. 4,50,317, and that on the Department from Rs. 7,73,809 to Rs. 8,48,698. The revenue during the same period increased from Rs. 64,696 to Rs. 72,603. Industrial and technical education received a good deal of attention. Rs. 2,58,055 were expended on industrial schools, and the provincialization of schools maintained by local bodies was completed. The number of students on the rolls increased from 2,905 to 3,323, of whom 1,500 were artisans and 372 agriculturists. The village travelling tanning demonstration party, which was sanctioned in 1928, started work in the Sialkot District and gave demonstrations at 4 centres, and subsequently moved to the Jullundur District where it gave demonstrations at 3 centres. A Government demonstration weaving factory started operations during the year at Shahdara; 1 graduate, 15 under-graduates and matriculates, 20 hereditary weavers and 10 apprentices were admitted.

In the United Provinces the bad agricultural conditions effected most industries, and the hand-loom weavers suffered severely owing to the comparative failure of the cotton crop and their inability to raise prices on account of the general drop in the prices of piece-goods. The Central Weaving Institute at Benares introduced new

Number of Primary Vaccinations in British India.
(1877 – 1928)



designs and trained labour for the hand-loom industry during the year, and also made experiments in the sizing of yarn. As regards silk, the small hand-loom factories and cottage workers continued to do fairly well, for, although the prices of expensive products fell by approximately 20 per cent., the prices of yarn decreased proportionately. The total number of Government and aided institutions again increased and amounted to 118 as against 112; and the number of students rose from 3,900 to 4,700. The technical and industrial schools sent exhibits to all the local industrial exhibitions, and the model weaving schools gave demonstrations in the surrounding Districts; they succeeded in introducing 316 fly-shuttle looms during the year at an expenditure of Rs. 2,591. The number of looms introduced during the previous year was however as high as 491.

We may now proceed to consider the question of Public Health, which, as we have seen in Chapter VIII, is under present conditions largely the concern of the provincial Governments. Some indication has already been given in that Chapter of the extraordinarily difficult problems which confront the medical authorities in this country. Climate and other circumstances of nature in any case render the people of India prone to many devastating epidemic and contagious diseases, and the social and religious customs of the country place great obstacles in the way of improvement. Yet, in spite of this, it cannot be denied that public health in India has been improving, if not from year to year, at any rate from decade to decade. Since the regular Census was started half a century ago the population has grown steadily; and although the greater part of this growth has doubtless been due to the administrative security and the comparative freedom from famine which followed the establishment of British rule, the spread of medical facilities and the development of organizations for dealing with epidemic diseases such as cholera, plague, kala-azar and malaria have played an important part also. In recent years, with the assistance of the provincial Governments, Municipalities and other local bodies have been taking an increasing share in these activities, not only by providing medical relief, but also by improving sanitation and by instructing the people in elementary notions of hygiene; and the number of hospitals, dispensaries and trained medical practitioners is growing yearly.

In Assam, there was a noticeable improvement in public health during 1928,—the latest year for which provincial figures are available,—the excess of births over deaths being the highest on record. The birth-rate for the year was 31·24, as against 30·25 in the preceding year, and an average of 30·01 for the five years ending with 1927. This rate is higher than that of Bengal, Burma and Coorg and lower than that of other Provinces. The death-rate was 22·16, against 23·47 in the preceding year, and an average of 23·97 for the five years ending with 1927; and was lower than that of all other Provinces except Burma and the North-West Frontier Province. This was particularly gratifying in view of the fact that there was a considerable increase in the incidence of small-pox, the death-rate being 1·23 *per mille* as against ·76 in 1927 and a decennial mean of only ·42. The number of vaccinations performed was lower than in the previous year. Plague was as usual absent. The campaign against kala-azar was continued vigorously; the mortality from it has been showing a gratifying decline for some time. The death-rate recorded under the head "fevers,"—which included deaths from kala-azar,—was 13·03 as against a decennial average of 16·72. 17 infant deaths were recorded in every 100 births, which was slightly higher than the mortality for 1927. There were 258 hospitals and dispensaries of all classes in the Province as against 253 in the previous year. The total number of indoor and outdoor patients treated in the State-public, local fund and private aided hospitals and dispensaries rose to 1,704,850 as against 1,620,012 in the previous year. The total income of all these institutions was Rs. 9,34,234 as against Rs. 9,40,141. Of this sum the Government contributed Rs. 4,22,576. The total expenditure decreased from Rs. 7,50,062 to Rs. 7,43,904. During the year 41 per cent. of municipal revenues was spent on sanitary works. Quinine was freely distributed throughout the Province, the number of parcels sold having risen from 5,570 to 7,841. Shortly after the close of the year a scheme for creating an organisation to investigate malaria and other diseases in the field was submitted to the Government and is receiving close attention. Arrangements were being made at the close of the period under review for opening anti-rabic out-centres in various parts of the Province.

In Bengal, a slight rise in the birth-rate and a fall in the death-rate resulted in a small increase in population, amounting to 4·1

per mille. The proportion of infant deaths, namely 18 per 100 births, was the same as in 1927. Cholera mortality in the Province was unfortunately very high; it exceeded the quinquennial average by 123 per cent. and the decennial average by 93 per cent. Good progress was made with cholera inoculations, against which there is much less prejudice among Bengalis than among the inhabitants of Northern India; and more than 2,000,000 inoculations were performed. Mortality from small-pox was considerably above the quinquennial average, the maximum number of deaths having occurred in May; the mortality in November was comparatively low, but the decennial average was exceeded in every month. About 35 per cent. of the total mortality from small-pox occurred amongst children and infants under 10 years of age, which indicates that there has been great laxity in enforcing the provisions of the Vaccination Act under which every child should be treated within 6 months of birth. Fevers caused somewhat over 750,000 deaths, or 16 *per mille*, during the year, which was considerably below the quinquennial mean. Malaria was held to be responsible for 49 per cent. of the deaths recorded under this head, as against 54 per cent. in 1927. The decline in the mortality from kala-azar, which has been evident during recent years, continued. Deaths from dysentery and diarrhœa were above the quinquennial average, the maximum having been reached in December and January and the minimum in June. The mortality rate from respiratory diseases exceeded the rate for 1927 and the decennial average. Good work was accomplished during the year in the 5 public health laboratories of Bengal. School medical inspection work increased during the year; 1 college and 176 schools were visited and 13,750 students were examined. Grants-in-aid were made to 50 local bodies for starting training schools for *dais*. 1,098 indigenous *dais* were trained in 98 classes during the year. The increasing popularity of the Publicity Bureau of the Public Health Department was demonstrated by the growing demands for its assistance from public bodies and private institutions and individuals. 130 places outside the headquarters, including remote villages, were visited, and 372 health lectures were delivered. 89 exhibitions and 77 baby shows were organized during the year. The number of primary vaccinations performed was 2,050,827 as against 1,928,674. The construction of 25 water-supply or sewerage undertakings was carried on during the year under the

supervision of the Chief Engineer of the Public Health Department. During the triennium 1926-28, 118 new dispensaries were opened and 26 closed, the net increase thus being 92. The total number of indoor and outdoor patients treated in the Calcutta hospitals during the triennium 1926-28 was greater by 393,700 than during the previous three years. Altogether 23,775,238 patients received treatment outside Calcutta during the years 1926-28 as compared with 21,572,385 during the preceding triennium. Exclusive of Calcutta, there were over 6,000,000 patients treated for malaria during the three years. The Public Health Departments continued to supply quinine to the dispensaries and it was also sold to the public through the Post Offices.

In Bihar and Orissa, the birth-rate during the year was appreciably higher and the death-rate appreciably lower than the decennial mean; both were somewhat higher than in 1927. The incidence of all the chief diseases except cholera was below the decennial average. For every 100 births recorded, 13 infants were reported to have died. An infant mortality rate as high as 16 per cent. was returned in urban areas, here maternity and child welfare work is said to have made little or no headway. The mortality from cholera rose from 1·4 *per mille* in 1927 to 2·2 in 1928. Between April and September it raged in epidemic form in practically every District and the total number of deaths recorded during this period was 55,662 as against 41,627 in the corresponding period for the previous year. To help local bodies to cope with the situation the Government sanctioned the employment of 20 additional doctors. Anti-cholera vaccine continued to be supplied free and there was great demand for it. 241,703 doses were issued to local bodies from the vaccine depot at Namkum, and a remarkably successful campaign for the voluntary inoculation of pilgrims was conducted by the Government on the occasion of the *Rath Jatra* at Puri. The incidence of small-pox declined during the year and at the same time a fairly big fall occurred in the number of vaccinations performed. A leprosy survey party was appointed for six years during the period, under the supervision of the Government's leprosy expert, to survey the most infected Districts, carry out propaganda, and establish outdoor clinics. In the interests of local bodies two sanitary schemes were undertaken by the Government; one was the project for ensuring a permanent supply of pipe water for the annual Sonepur *Mela;* the other consisted of arrangements

for providing a reliable water-supply for the town of Puri. Municipal bodies in the Province spent 35 per cent. of their revenues during the year on sanitation. The scheme for the expansion of medical relief in rural areas made progress. A tuberculosis sanatorium at Itki was opened and a Pasteur Institute for the Province was sanctioned. The Bihar and Orissa Maternity and Child Welfare Society which was registered in 1928 made good progress. There are now 4 maternity and child welfare centres in the Province. 28 new dispensaries were opened during the year.

In the Bombay Presidency the general death-rate increased slightly during 1928 over the mean of the previous five years. Public health in the Presidency from 1918,—the year of the influenza pandemic,—showed steady progress up till 1922 when the death rate *per mille* reached the record low figure of 23·61. Subsequently there has been a gradual return to the low standard that previously prevailed. During the year under review the figure was 27·28. Mortality from "fevers," respiratory diseases, and "other causes," rose in relation to the quinquennial average, while that from cholera, small-pox, plague, and dysentery and diarrhœa, declined. The infant mortality rate, however, rose considerably, 18 infants per 100 births having died during the first year of life as against 16 in 1927; but the actual number of births reported, being over 700,000, was,—except for 1914,—the highest ever recorded. The activities in connection with maternity and infant welfare work in the Presidency showed satisfactory progress during the year. The number of civil, local, and municipal fund hospitals and dispensaries, which had been 638 at the beginning of 1926, had risen to 666 by the end of 1928. The total number of patients treated during 1928 was 5,098,034, as compared with 4,473,567 in 1927. The number of women who sought medical relief at State-public, local fund, and private-aided hospitals and dispensaries rose from 714,866 in 1926 to 823,961 in 1928. The total receipts of these hospitals and dispensaries in the Presidency during the year amounted to Rs. 68·40 lakhs in 1928 (as against Rs. 65·68 lakhs in the previous year) of which the Government contributed Rs. 32·49 lakhs. The health and "baby week" celebrations which have been held in the Presidency for the past six years are making steady progress. During the year 112 shows were held. The number of primary vaccinations per-

formed showed a slight increase on the previous year and amounted to 652,900.

In Burma, the recorded birth-rate was lower than the quinquennial mean, while the death rate was slightly above it. One in every five children born did not survive the first year of life, the urban mortality rate being higher than the rural one. In towns, roughly one in three infants is said to have died. Child welfare work continued to be carried out by voluntary child welfare societies. Except for respiratory diseases, the mortality under all the chief compilations headings was above the quinquennial average. Deaths from cholera were particularly high, and showed two definite peaks, the higher being in April and the lower in December, which is unusual. Excellent progress was made with anti-cholera inoculations, the number achieved in 1928 being three times greater than in 1927. The increase in the number of vaccinations performed, and in the amount of quinine distributed, was also satisfactory. 23 per cent. of the municipal income was utilised on sanitary works during the year.

In the Central Provinces births during the year numbered 647,135, the birth-rate *per mille* of the population being 46·51 as against 45·58 in 1927. Deaths totalled 468,321, or 33·66 *per mille*, as against 31·31 in 1927 and a quinquennial average of 31·21. 154,286 of these deaths were of infants under one year of age and the infant mortality was thus 23·84 per hundred births. Although this rate was high and represented an increase over the previous year, considerable progress was made in infant welfare work; 19 towns held "baby weeks" and 14 new infant welfare centres were opened during the year, the total number in the Province being 35. Deaths from "fevers" rose from 224,068 in 1927, to 259,109; this increase was largely accounted for by the greater prevalence of malaria. The free distribution of quinine was continued and extended during the year. Deaths from cholera, although less than in 1927,—being 12,198 as against 16,311,—were still well above the mean for the years 1923-27; the Districts in the Nerbudda Valley suffered most from the disease. Small-pox caused 1,399 deaths against 2,809 in 1927, and plague 3,770 as against 3,368. Inoculation against plague increased in popularity, and there was also a satisfactory rise in the number of vaccinations performed, which amounted to 586,025 as against 569,430. A slight increase in deaths from respiratory diseases was recorded

during the year. A substantial extension occurred in medical publicity work; the number of Government travelling dispensaries increased from 29 to 39 and 5,078 villages were visited, the number of patients treated being 90,071. Besides dealing directly with epidemics, the officers in charge of these dispensaries were employed on propaganda work, medical relief in rural areas, medical inspection of schools, checking vital and vaccination statistics and reporting on the water-supply and sanitation of villages. The total number of hospitals and dispensaries in the Province at the end of the year was 335, of which 30 were maintained by the Government; 26 new dispensaries had been opened and 11 previously established ones had been closed. The total number of patients treated during the year was 2,979,777 as against 2,607,948 in 1927. The total receipts of State-public, local fund, and private-aided institutions rose from Rs. 18,07,886 to Rs. 19,88,074. Government contributions amounted to Rs. 8,51,095, as against Rs. 5,07,444. The total expenditure for the year was Rs. 15,30,052 as against Rs. 13,92,047. Government grants to Municipalities for sanitary works amounted during the year to Rs. 2,22,357. The municipal committees spent 38 per cent. of their income on sanitation as against 48 per cent. in 1927. At the end of the year there were 103 villages in the Province in which the provisions of the Village Sanitation Act were in operation.

The state of public health in the Madras Presidency was not satisfactory during the year. The births showed a slight increase, being 1,534,445 as against 1,495,747 in 1927. The deaths recorded were the highest on record for the quinquennium, having reached the figure of 1,080,744. The mortality from cholera, which declined steadily until 1923, has increased during subsequent years, though not progressively, but the quinquennial peak was reached in 1928. With the exception of the Nilgiris and the Malabar Districts, which were practically free, every District in the Presidency was infected by cholera during the year, and the mortality amounted to 57,677 as against 35,334 during 1927. Strenuous efforts were made to combat the disease and anti-cholera inoculation gave ample proof of its protective value, the deaths among the inoculated being 0·30 *per mille* and those among the uninoculated 4·86. The cyclical fall in small-pox mortality which began in 1927 continued into 1928, the deaths having fallen from 7,781 to 7,618. A severe epidemic of malaria occurred during the

year and over 1,000,000 cases were treated. The "fever" death-rate accordingly rose, especially as influenza was also prevalent in some Districts. A special malaria officer carried out anti-malarial investigations in 6 Municipalities and in selected areas in 9 Districts. The scheme for free distribution of quinine proved satisfactory. A District Health Officer trained in malariology was appointed during the year to undertake malarial measures in the Vizagapatam District. The deaths from plague during the year amounted to 2,106 as against 2,457 in 1927. Leprosy was reported from 7 Districts in the Presidency; filariasis from 4; beri-beri from the Districts in Northern Circars; epidemic dropsy in Ganjam, and guinea-worm infection in several Districts. The total number of medical institutions of all classes at the end of the year 1928 was 1,089 as compared with 1,038 in the previous year; of these 52 were exclusively devoted to the treatment of women and children. During the year the Government took over the entire management of 96 local fund and municipal institutions, and 10 institutions for women and children, for development as up-to-date centres for medical and surgical treatment. The transfer gave immediate relief to the local boards to the extent of over Rs. 10 lakhs a year. The number of rural dispensaries working at the end of the year was over 400. There was a general increase in the volume of medical relief afforded, the number of patients treated in State-public, local fund, and municipal and private institutions having risen from 10,623,920 in 1927 to 11,159,351. The total receipts of State-public, local fund, and private-aided institutions in the Presidency during the year amounted to Rs. 66,88,660, and the total expenditure to Rs. 66,58,185 as compared with Rs. 62,30,727 and Rs. 62,24,405 respectively in the previous year. The King Institute at Guindy continued to manufacture and distribute vaccine lymph and the total number of vaccine doses issued was 2,258,226 as against 2,211,795 in the previous year. Owing to the wide-spread epidemic of cholera there was a substantial increase in the demand for cholera vaccine and 1,064,490 doses were issued as compared with 727,000 in 1927-28. Health propaganda continued to develop during the year and 108·997 lectures excluding magic lantern demonstrations were delivered in over 50,000 places to audiences totalling about 6,700,000 people. The "health week" was celebrated with enthusiasm throughout the whole Presidency.

The provision of facilities for treating venereal diseases, and for increasing the number of centres at which anti-rabic treatment is available, received attention, and steps were taken to popularise nursing services. The total number of vaccinations performed was 1,764,500 as compared with 1,755,466 in 1927-28. The anti-hookworm campaign, which hitherto had been carried out with the assistance of the International Health Board associated with the Rockefeller Foundation of New York, was taken over by the Government. According to the information furnished by Municipalities the total allotment for sanitation amounted to 27 per cent. of their total income during the year.

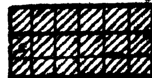
In the North West Frontier Province, except for a small increase in the prevalence of small-pox, the year 1928 was exceptionally healthy. The birth-rate rose and the death-rate fell remarkably. For the first time since the Province was created in 1901, cholera and plague were absent during the year. Moreover an appreciable decrease occurred in the mortality from respiratory diseases, which was largely attributed to the increasing attention given by Municipalities and district boards to sanitation. Good progress was made with vaccination. The infant mortality-rate, —13·7 per 100 births,—was the lowest recorded for the last five years. Fevers accounted for fewer deaths, though more cases of malaria were treated in medical institutions. Mortality from bowel complaints was also slightly above the quinquennial average. Nearly 18 per cent. of the municipal income was spent on public health works, and a growing demand was manifested for modern medical facilities.

In the Punjab, except for a serious outbreak in the Kulu Valley, the cholera record of the year 1928 was satisfactory. The careful precautionary measures which were taken at the Sun Eclipse Fair at Thanesar are believed to have prevented the spread of the disease. The mortality occasioned by the chief epidemic diseases, namely cholera, plague, and small-pox, was small as compared with that from fevers and respiratory diseases. The fever mortality, moreover, itself declined substantially, being only 15·41 *per mille* as against a quinquennial average of 20·17. This fall was due to the exceptionally low incidence of malaria,—an occurrence which had been predicted in the usual malaria forecast issued in 1928. The number of vaccinations performed during the year was over 1,500,000 as against about 1,290,000 in 1927. The

birth-rate, 46·30 *per mille,* was substantially above the death-rate of 24·72 *per mille*; the average death-rate for the quinquennium was 33·7 *per mille*. Out of every 100 infants born 17 died during the first year of life. Maternity and child welfare work was satisfactorily extended and encouragement was given to voluntary efforts in this direction. The medical institutions throughout the Province are gaining in popularity and a higher number of patients are treated every year. The expansion of medical relief in rural tracts was vigorously pushed forward.

In the United Provinces the year was not as healthy as 1927. There were more deaths from all the principal diseases except small-pox and "fevers," the increase in mortality from plague and cholera being pronounced. The birth-rate rose from 36·72 to 38·24 *per mille*, the total number of births being 1,735,159. The death-rate, although greater than in 1927, was slightly below the quinquennial average, the total number of deaths recorded having been 1,095,736. The District of Pilibhit had the highest death-rate, namely 38·77, and that of Fatehpur the lowest,—15·04. The infant mortality-rate was 159·9 *per mille* as compared with 151·7 in 1927. The death-rate from "fevers" decreased from 786,552 to 765,954; malaria is believed to have accounted for 687,000 of the deaths recorded under this head. There was a sharp rise in deaths from cholera, which amounted to 44,941 as compared with 28,285. The highest death-rate from this disease was in Sultanpur. Deaths from small-pox declined from 7,894 to 3,012. Over 1,500,000 vaccinations were performed during the year, the average for the triennium ending 1928-29 being 1,508,504 as against 1,372,715 in the previous triennium. The number of deaths from plague was substantially larger than in the previous year, amounting to 80,943 as against 15,570, the highest mortality-rate, namely 7·32 *per mille*, being in Muzaffarnagar District. Deaths from dysentery and diarrhœa, and from respiratory diseases, amounted to 13,212 and 34,300 as against 12,186 and 29,028 respectively in the previous year. During the period the total number of medical institutions in the Province declined from 583 to 576, but the number of patients treated rose from 6,534,473 to 6,980,596. Maternity and child welfare work was conducted in 45 centres, which received grants from the Government to the extent of Rs. 1,21,600,—a sum more than double that granted in the previous year. The total income of the State-public, local fund and

Totals of Literates and Illiterates : British India.



LITERATES
18·6 Million
[each square
represents
1,000,000]

ILLITERATES
229 Million

private-aided hospitals and dispensaries amounted to Rs. 33·16 lakhs as compared with Rs. 31·70 lakhs in 1927, while the expenditure was Rs. 32·54 lakhs as against Rs. 30·08 lakhs. The Board of Public Health made grants totalling Rs. 8·54 lakhs during the year. A considerable proportion of this sum was devoted to improvements in sanitation and to the provision of medical facilities at fairs; in addition valuable work was undertaken in the prevention of malaria. To check the spread of plague a vigorous anti-rat campaign was conducted; there has been practically no opposition from orthodox Hindus to rat-killing, and the majority of municipal boards are becoming convinced of the efficacy of this method of dealing with the disease. Out of 36 travelling dispensaries, 31 were chiefly employed in plague-prevention work, and no fewer than 449,802 inoculations against the disease were performed by various agencies, as against 107,825 in the previous year. A great deal of useful anti-malarial work was carried on during the year. Experiments of various kinds such as the free distribution of quinine, its use in primary schools and the treatment of tanks and standing water near human habitations were continued. Malarial surveys were conducted in 77 villages. Owing to lack of funds the District Health Scheme could only be extended to one more District during the year. The results of the new "village aid" scheme were however encouraging. The scheme aims at establishing dispensaries in villages, with certain simple medicines, in the charge of the village schoolmaster, at training youths of the village in first aid, and at improving sanitary conditions in the villages by employing labour gangs under the supervision of sanitary inspectors. The scheme has been introduced into 1,040 villages in part and into 260 villages in full.

We may conclude this Chapter by considering the vitally important subject of education. The fact that approximately 229 out of the 247 million inhabitants of British India are illiterate, necessarily constitutes a very serious obstacle to the attainment by the Indian peoples of full self-sufficing nationhood on modern democratic lines; and a variety of factors peculiar to the country,—such as the geographical isolation of the villages in which the vast majority of the inhabitants lead their lives, the apathy, poverty, and superstition of the masses, the prejudice against female education and against the employment of women teachers, and the tendency on the part of the more enterprising and intelligent of

the rural population to migrate to the towns,—necessarily render the diminution or removal of this obstacle an exceptionally slow and laborious process. Nevertheless, the improvement which has been taking place throughout the country during recent years both in the demand for education and in the provision of it has unquestionably been very substantial; and no aspect of the problem is more interesting or significant than the remarkable awakening among the women of India of a demand for intellectual enlightenment. Female education in the primary schools has already attained impressive dimensions, and the number of women undergoing instruction in secondary schools and in colleges is steadily increasing. Women are also being encouraged to take up physical training, games, and vocational education, and propaganda in this excellent cause is extending rapidly. In 1928-29 the number of recognised institutions for educating girls rose by 1,735 to 31,738 and their enrolment increased by 95,141 to 1,308,687; 775,732 girls moreover were under instruction in boys' schools, and the total number of girl pupils in recognized institutions was thus over 2 millions. The vast majority of these girls of course were reading in primary schools, and throughout the whole country there were only 230 women studying in medical colleges and 166 in training colleges for teachers. Nevertheless, even these figures represent a considerable advance on those for the preceding year, which amounted to 182 and 134 respectively. Compulsory education is another matter that has been receiving an increasing amount of attention during the last decade. The Legislatures established as a result of the Montagu-Chelmsford Reforms soon declared themselves in favour of compulsory education on principle, but the Municipalities and District Boards have shown considerable hesitation in putting it into effect, largely from the fear that the imposition of the fresh taxation required to finance coercive measures might deprive their members of their seats at the next elections. But this cautious attitude seems to be slowly disappearing, and compulsory primary education is now being steadily extended. During 1928-29 compulsion had been introduced in 138 Municipalities and 2,962 rural areas, the figures for the previous year having been 121 and 1,806 respectively.

Ministers of the provincial Governments are unquestionably displaying more and more courage, enthusiasm, and initiative on the subject of education. The old, one-teacher type of village

school is being gradually eliminated and the grant-in-aid system is receiving attention. At the same time considerable decentralisation of control is taking place. Municipalities and local boards are being entrusted with wider powers, and many of them are exercising their increased responsibilities wisely. Particularly satisfactory among recent developments in education has been the increasing attention devoted to the education of children belonging to the "depressed classes," or "untouchables". Owing to differences in the manner of classification in the Provinces, it is difficult to give accurate figures in the total number of pupils belonging to this unfortunate section of the population who are now under instruction, but leaving aside Burma, where there are no untouchables, and Assam, where it is impossible to distinguish between the large numbers of aborigines and hill tribes and the untouchables proper, the total number of depressed class pupils reading in all kinds of institutions in the remaining seven Provinces was 1,005,125 during 1928-29, as compared with 919,568 in the previous year. This figure represents 3·5 per cent. of the total number of persons of the depressed classes in these Provinces, as against an All-India figure for all communities of 4·9. The number of depressed class pupils has shown a satisfactory increase, but much leeway, of course, has still to be made up, and in all Provinces, except Bengal, the number of children of the depressed classes who reach the secondary and University stages is still regrettably small. One satisfactory feature, however, is the increase in the number of depressed class pupils reading in ordinary schools and in that of caste pupils reading in the special schools intended for the depressed classes.

Progress has also undoubtedly been taking place in secondary and collegiate education during recent years, and an increasing amount of attention is being given to the admitted defects of the existing system, which were comprehensively examined in the report of the Auxiliary Committee of the Indian Statutory Commission which was appointed to review the growth of education in British India, and published its conclusions during the year under review. In general it would probably be true to say that secondary education in India is on the one hand, under existing circumstances, excessive in quantity, and, on the other, is defective in quality;—that is to say that while the number of pupils under instruction is greater than that of the posts which at present are

available for them, the standard of instruction is poor, owing to faulty methods of tuition, lack of interest and of adequate qualifications on the part of the staff,—which is as a rule ill-paid,—absence of organized corporate life and physical training, the predominantly literary bias of the curricula, and the usually mercenary ambitions of the pupils. Moreover it is difficult to see how really substantial improvement can be effected until the pupils themselves, and their parents, show signs, as a whole, of requiring something in addition to the customary literary education whereby clerical employment may be obtained, since otherwise little can eventuate beyond the mere multiplication of institutions of an ineffectual type. Even at the best, only a small portion of India's population can hope to pass beyond the stage of secondary education, and it is therefore essential that this education should be sound and complete in itself. A growing desire is already manifesting itself to separate secondary and University education more effectively, confining each to its proper sphere and making the former self-contained; boards of secondary and intermediate education have now been constituted in certain Provinces and are doing valuable work, and intermediate colleges have been established in some places. Vocational training is also becoming steadily more popular, and since the very serious and widespread unemployment among the literate middle classes has been due largely to the comparative absence of professional and technical education, this development is particularly satisfactory. The number of engineering schools and colleges in the country in 1928-29 was 17 and their pupils amounted to 4,159. As regards physical training, also, it is satisfactory to observe that the amount of attention devoted to this subject in the schools is developing very rapidly, and some Provinces now employ whole-time directors of physical education.

The defects of University education in India are, within their own sphere, not dissimilar in nature and origin to those from which secondary education has been suffering. Originally, the majority of Indian Universities were examining bodies, established primarily for testing the attainments of students in groups of colleges which, individually, were often widely separated both culturally and geographically from each other, and whose ambitions generally outran their capacity, owing to lack of adequate organization, staff, and equipment. Recently, however, considerable

improvements have been effected. The old Universities are gradually being remodelled so as to be both teaching and examining bodies, and new ones are being established. In addition, a desire to relegate preliminary work to the intermediate colleges and to confine the Universities to higher instruction is now evident, particularly in the United Provinces, where there are no less than five Universities. Colleges are being reorganized, new methods of administration adopted, and new courses of instruction introduced. Unfortunately, the establishment of new colleges seems at present to be leading to undesirable competition for students, and consequently to a lowering of the standard of education. But the growing tendency towards specialization in the teaching of particular subjects would probably, in time, have enabled this difficulty to be overcome; and the establishment in 1926 of the body known as the Inter-University Board, which was set up in order, *inter alia*, to co-ordinate the work of the large number of Universities scattered throughout India, and which has already done much to collect information and stimulate thought regarding current University problems, should prove of great value in countering unfortunate tendencies of this kind. As we have already seen in Chapter VIII, University education, in contrast to secondary and primary education, is not exclusively the concern of the provincial Governments, and the denominational Universities at Aligarh and Benares, together with the University of Delhi, obtain financial assistance direct from the Government of India. Apart from these three institutions, there are now no less than 15 other Universities in the country, namely, the Agra, Annamalai, Allahabad, Andhra, Bombay, Calcutta, Dacca, Lucknow, Madras, Mysore, Nagpur, Osmania, Patna, Punjab, and Rangoon Universities. Brief accounts of the progress achieved by some of them during the year will be found a few pages hence, when we come to consider the educational developments which have occurred since the issue of our last Report in each of the Provinces of British India; but considerations of space will preclude us from describing the circumstances and achievements of these numerous institutions at such length as we devoted to the Universities with which the Government of India is directly concerned.

Educational activity in India is not confined solely to the formal educational institutions, nor to children and adolescents, and there has been an increasing recognition in recent years on the part of

the provincial Governments that adult education is a necessity if the country is to have an electorate able to make intelligent use of the franchise. There is, of course, no great difficulty in developing adult education amongst the urban populace, for the towns offer plenty of scope for the University extension movement, but the circumstances of the rural population are very different and require special treatment. Among the measures adopted for introducing adult education into rural India have been the organization of lectures on health and allied subjects, the encouragement of the night school movement, the establishment of village libraries and elementary literary societies, and the device of encouraging medical men to settle down in the villages. All these seem to be yielding some results. It is however difficult to form a clear idea of the progress made by adult education throughout the country, since in many Provinces no distinction is made in classification between schools which really provide for the education of illiterate adults, and those,—especially night and part-time schools,—which are attended most largely by ordinary primary school children who are unable to attend day schools.

The following tables will show at a glance the number of institutions and scholars in India, and the total expenditure on education in respect of recognised institutions during the year 1928-29.

Institutions and scholars, 1928-29.

Type of Institution.	Institutions.		Scholars.	
	Males.	Females.	Males.	Females.
Recognized Institutions	192,062	31,738	9,515,109	2,032,388
Unrecognized Institutions	30,792	8,430	512,977	105,368

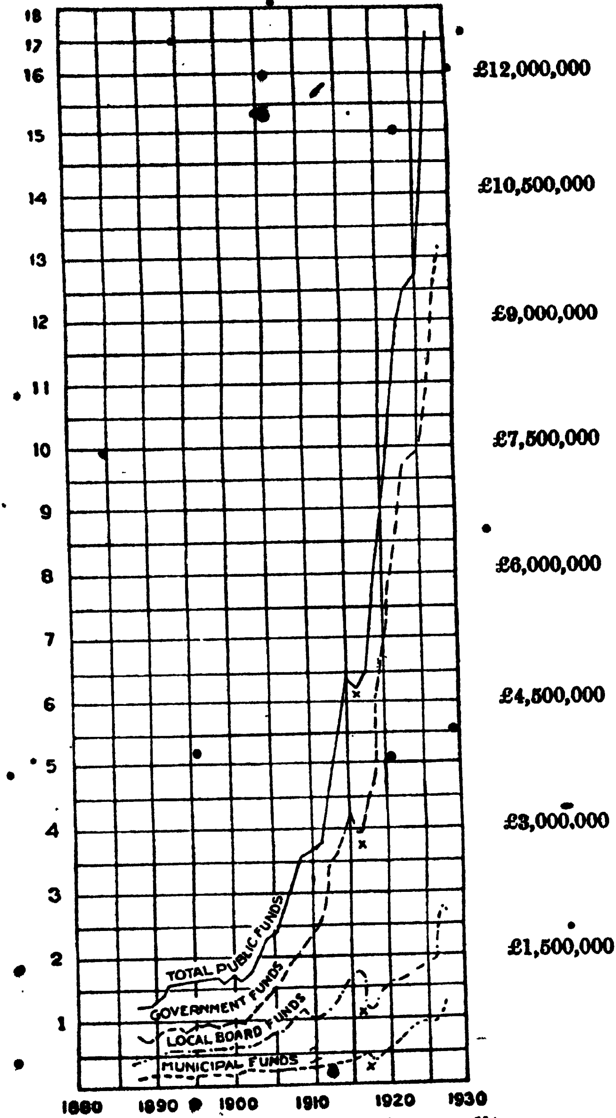
Total expenditure on Education in India, 1928-29.

(Recognised Institutions.)

	Rs.
1. From Government Funds	13,18,10,145
2. From Board and Municipal Funds	3,94,14,369
3. From fees	5,78,17,829
4. From other sources	4,16,89,910
TOTAL	27,07,32,253



Public Expenditure on Education.



× Fall due to reclassification of expenditure.

Before we turn to consider in detail the progress of education in British India during 1928-29,—the latest year for which full particulars are available,—it seems desirable to give a brief general description of the way in which the educational structure in the majority of Provinces is organized. The control of public instruction is as a rule exercised by the Government through the Director of Public Instruction. The Government, however, generally deals direct with such Universities as there are on questions of higher education. Affiliated with the University or Universities are the colleges which prepare students for University examinations. Below the colleges come the high schools, which prepare students for the school-leaving or similar examinations that qualify for admission into the lower branches of the public services. Side by side with the high schools are the middle schools, which teach the first few standards only of the secondary school course; there are also in some places separate high and middle schools for girls. Below the secondary schools come the large number of primary schools both for boys and girls, in which instruction is given in the vernaculars to the vast mass of the people. As a rule, the Province is subdivided into a number of "divisions", under the control of divisional inspectors, who are responsible for visiting the schools within their respective areas and reporting upon them to the Director of Public Instruction.

In Assam the number of institutions and scholars increased during the year from 6,307 and 317,081, to 6,655 and 339,585 respectively. Recognized institutions increased from 5,753 to 6,070, and their enrolment from 295,541 to 316,843. Expenditure on all institutions for boys and girls increased from Rs. 47,12,122 to Rs. 51,59,640. The cost to provincial revenues increased from Rs. 27,49,380 to Rs. 30,23,272. As regards collegiate education the enrolment of the Arts Colleges rose from 997 to 1,124. Proposals made to the University for the affiliation of both the colleges to the intermediate standard in civics were sanctioned. As regards secondary education, the number of schools for boys increased from 357 to 376 during the year and their enrolment from 50,320 to 55,215. High and middle English schools for Indians increased from 45 and 156 to 47 and 164 respectively, and middle vernacular schools increased from 155 to 164 and their enrolment from 19,941 to 21,768. As regards primary education, the number of schools for boys increased during the

year from 4,719 to 4,906 and their enrolment from 217,934 to 229,563. Expenditure on them increased from Rs. 10,98,939 to Rs. 11,59,693. The number of trained teachers increased from 3,417 to 3,570, and the total direct expenditure on training institutions was Rs. 96,115 against Rs. 90,234. There were 15 technical and industrial schools at the end of the period, with 482 pupils, as compared with 14 schools and 396 pupils in the previous year. As regards female education, the number of recognized schools for girls increased from 510 to 565 and the number of girl pupils including those working in boys' schools increased from 43,794 to 49,175.

In Bengal the number of institutions rose during the year under review by 2,139. Recognized institutions increased from 61,786 to 63,910 and unrecognized institutions from 1,568 to 1,583. The number of pupils attending recognized institutions rose from 2,446,678 to 2,567,357 and pupils attending unrecognized institutions increased from 55,034 to 57,865. Of the total number of pupils reading in all classes of institutions 2,129,098 were males and 496,124 females, as compared with 2,039,786 and 461,926 respectively in the previous year. The total expenditure on public instruction amounted to about Rs. 434 lakhs of which about Rs. 153 lakhs were received from provincial revenues. As regards collegiate education, the number of colleges for men and for women were 44 and 4 respectively in March 1929, as compared with 42 and 4 in the previous year. The cost of maintaining colleges fell from Rs. 36,81,956 to Rs. 36,57,438, and the total expenditure incurred in the up-keep of colleges for men amounted to Rs. 35,10,693 as compared with Rs. 35,35,370. Of this amount Rs. 12,81,350 were contributed from provincial revenues. It was reported that the stiffening in the standard of University examinations had been followed by a decline in the number of students in Arts Colleges and a consequent reduction in fee income. As regards secondary education, the number of schools for boys rose from 2,747 to 2,825. High and middle English schools increased by 22 and 60 respectively, but middle vernacular schools decreased by 4. The number of pupils in high and middle English schools increased by 14,377 and 10,835 respectively and that in middle vernacular schools by 107. The cost of maintaining secondary schools amounted to more than Rs. 120 lakhs. As regards primary education the number of schools for Indian boys rose from 39,990 to 41,232, and they were attended

by 1,561,307 pupils as compared with 1,497,677 pupils in the previous year. Of the total Hindu male population 6·6 per cent., and of the Muhammadan male population 6·5 per cent., were in boys' primary schools at the close of the year. 45·5 per cent. of the total number of pupils were Hindus and 54·4 per cent. Muhammadans. The total cost of maintaining these primary schools amounted to Rs. 66,42,352, of which Rs. 21,15,776 came from provincial revenues. During the year there were 95 institutions in the Province for training male teachers and 10 institutions for training female teachers. The total number of students at the three institutions for technical education in the Province, namely, the Bengal Engineering College, the Ahsanullah School of Engineering at Dacca, and the Government Commercial Institute at Calcutta,—was 277, 417 and 278, as against 268, 468 and 253 in the previous year. The number of schools of all grades and types for Indian girls increased during the year from 15,741 to 16,798, and the number of pupils attending them from 387,087 to 423,005.

In Bihar and Orissa, educational progress received a check during the year owing to the serious financial position of the Government. The total expenditure on education decreased by Rs. 6¼ lakhs as against an increase of Rs. 9¼ lakhs in the previous year. The set-back was most pronounced in connection with primary education, which had expanded very rapidly during the five preceding years; between 1923 and 1928 the number of primary schools in the Province for Indian boys rose by about 5,000. Direct expenditure from public funds on primary education increased during the year from Rs. 60·94 lakhs to Rs. 62·16 lakhs, but nevertheless the number of primary schools declined from 27,900 to 27,037 and the number of pupils from 898,218 to 876,349. The decrease occurred exclusively among pupils in the infants' classes whose number fell by nearly 40,000, while every other class showed an increase. This marked decrease was chiefly due to the fact that the District Boards, which had been encouraged by increasingly large recurring Government grants in the past, found themselves faced with the necessity of retrenchment as soon as it was realized that the financial position of the Government precluded the continuance of the increases. The position was serious, since many Boards, largely owing to lack of financial prudence, had heavy undischarged liabilities at the end of the year. For example, one Local Board which had over-spent its allotment by more than

Rs. 3,000 in the previous year, again over-spent it by Rs. 6,719 in the year under review. Another Board was unable to make any payments at all in respect of the stipends due to teachers for the fourth quarter of the year, while a third had a liability of Rs. 42,000 in respect of stipends due for the third and fourth quarters which it had to pay from its next year's budget. An additional cause of financial embarrassment has been the continuous increase in the cost of existing schools in recent years,—owing largely to the increase in the number of trained teachers. Compulsory primary education continued to be in force in 1 Municipality and 4 rural areas during the year. As regards secondary education, the total number of schools in the Province, including middle vernacular schools for all classes of boys and girls, both Indian and European, rose during the year from 778 to 822. The number of pupils increased by 10,487 and the direct expenditure by Rs. 2·14 lakhs. These figures stand out in marked contrast to those for primary schools. There was an increase in the number of middle English schools from 391 to 426 while the number of middle vernacular schools remained almost stationary. It has been calculated that the average cost of the 363 middle English schools which were supported by public funds was Rs. 978, whereas that of the 212 middle vernacular schools was Rs. 1,355, the difference being almost entirely due to the higher fees charged in the middle English schools. Good reports were received of the experiments which were being tried in introducing vocational training in middle schools. 5 schools conducted classes in carpentry, 5 in agriculture, 7 in tailoring, and 2 in weaving. In response to a widely expressed demand on the part of public men and experienced teachers, an interesting experiment has been in progress in the Province during the past four years in teaching students in the vernacular up to the matriculation standard. This demand is in curious contrast to the strong desire on the part both of parents and pupils for English-teaching close to their homes, which has resulted in the conversion of so many middle vernacular schools into middle English schools. The experiment is still in progress and the results so far have been inconclusive,—largely owing to the difficulties experienced in obtaining a sufficient number of text books in the vernaculars. As regards University and collegiate education, the chief event of the year was the settlement of the long-standing controversy as to whether the colleges at Patna

should be under the control of Patna University, by the establishment of a Central University Board to control inter-collegiate teaching and the corporate life of the students. The number of Arts and Science Colleges remained the same as in the previous year, namely 7 first-grade and 4 second-grade colleges, but the number of pupils rose from 3,383 to 3,717. The total direct expenditure on collegiate education rose from Rs. 10·5 lakhs to Rs. 11·4 lakhs, over 80 per cent. of the increase being due to the opening of the new Science College. The number of training establishments for secondary school teachers remained the same as in the previous year, namely 5, but that of pupils increased from 267 to 275. Unfortunately, the prospects offered to those who complete the course are not sufficient to attract pupils who have passed the intermediate standard, since,—largely owing to the depressed financial position of local bodies,—the pay obtainable is very low and averages little more than Rs. 30 per month. Despite the adverse circumstances of the year a certain amount of progress was made in female education. Although the total number of girls' schools and of female pupils decreased from 2,978 and 121,164 to 2,780 and 118,950 respectively, the decrease was entirely confined to primary schools, and the number of pupils reading in middle English schools increased from 1,631 to 2,567 and the number of such schools from 14 to 18. It was however reported that the number of trained women teachers was still far short of the demand.

In the Bombay Presidency the total number of recognized and unrecognized educational institutions increased during the year by 329 to 17,042, and the number of pupils in them by 38,687 to 1,230,840. Out of a total of 26,831 towns and villages, 10,579 possessed schools, the average area served by each town or village being 11·7 square miles. The percentage of male scholars under instruction in all kinds of institutions to the total male population was 9·69, as against 9·43 in the preceding year, while that of female scholars was 2·71 as against 2·58. Hindu pupils in recognized institutions throughout the Presidency numbered 926,167, Muhammadans 206,780, Indian Christians 34,680, Parsis 18,111, and Europeans and Anglo-Indians 5,158. The total expenditure on public instruction rose by over Rs. 6 lakhs to Rs. 396 lakhs, of which 49·6 per cent. was met from Government funds. Primary schools absorbed over Rs. 198 lakhs. As regards collegiate educa-

tion, the number of candidates for the school-leaving examination for the purposes of matriculation increased by 364 to 8,535, of whom 60·8 per cent. passed. The total number of students in the 15 Arts Colleges increased by 108 to 7,193, of whom 418 were women, as against 395 in the preceding year. The number of students in the 4 Law Colleges increased by 76 to 1,175. The number of students receiving instruction in commerce and engineering was 283 and 342 respectively. As regards technical and industrial education, the number of schools increased by 9 to 41 and the number of pupils by 50 to 2,696. The expenditure on these institutions increased by Rs. 60,986 to Rs. 5,81,464. Turning now to secondary education, the total number of schools increased by 17 to 587 and the number of pupils by 5,355 to 113,933. The total expenditure of all secondary schools was over Rs. 81 lakhs, a rise of over Rs. 3¼ lakhs. The number of primary schools for boys in the Presidency increased during the year by 167 to 12,926, and the number of pupils by 23,937 to 903,331. The number of girls under instruction in primary schools was 220,597, which represented an increase of 9,318. The total expenditure on primary education increased by Rs. 68,000 to Rs. 198·24 lakhs. There were 13 training institutions for men and 19 for women in the Presidency during the year, containing 802 and 490 students respectively.

The annual Report on Public Instruction in Burma during 1928-29 contains an interesting comparative statement of the chief educational statistics for that year and for the year 1904-05. The number of recognized institutions had increased during the twenty-four years by 1,500 to over 7,000 and the attendance from 200,000 to 500,000; and the number of persons receiving University education had increased from 178 to 1,732. The number of secondary schools for boys had risen from 400 to 1,300, and that for girls from 50 to 140; attendance had correspondingly risen from 35,000 to 136,000 in boys' schools and from 8,000 to 67,000 in girls' schools. The actual number of primary schools had decreased from 5,035 to 4,851, but the attendance had increased from 160,000 to 280,000. There had thus been a total increase from 20,000 to about 26,000 in the number of institutions and from 371,000 to 705,000 in the number of pupils. Expenditure during the period rose from Rs. 27 to Rs. 2,16 lakhs. As regards University and collegiate education during the year under review, there are few

important events to record. The total attendance at the colleges varied little, being 1,732 as against 1,726 during the previous year; 1,292 of the students were at University College, 291 at Judson College, 106 at the Intermediate College, Mandalay, and 43 at the Agricultural College. 3 new hostels were opened at University College during the year, which now compares favourably in the matter of residential accommodation with most of the new Universities in England. At Judson College, the foundation stones of the new administrative building and of the women's hostel were laid during the year. Research is flourishing at the University and useful work in a large number of subjects has recently been achieved. The Library at University College is also growing satisfactorily and now contains 26,516 volumes. Turning now to secondary education, it is noteworthy that the policy of concentrating vernacular secondary schools continued during 1928-29, the number of such schools having fallen from 1,197 to 1,172 but the attendance having increased from 133,844 to 137,248. Unfortunately, no less than 85 per cent. of the pupils were in the primary standards. The number of Anglo-vernacular schools increased from 244 to 253,—of which 102 were high schools with an attendance of 34,789, 140 were middle schools with an attendance of 21,768, and 11 were primary schools; 36 per cent. of the pupils were in the primary standards as against 56 in the previous year. The qualifications of teachers in secondary schools were still unsatisfactorily low. During the year, building grants of over Rs. 20,000 were made to aided Anglo-vernacular and English secondary schools. Progress was recorded in primary education during the year, the total number of boys receiving education in primary schools of all classes having been 252,875, which represents an increase of 10,000 over the previous total; and the number of girls increased by as much as 11,000 and totalled 180,099. The number of upper primary schools increased from 4,061 to 4,218, while that of lower primary schools fell from 632 to 620, though the attendance remained approximately the same. The number of pupils remaining in the lower primary standards remained far too great and amounted to 81 per cent. of the total.

In the Central Provinces the number of pupils under instruction increased from 414,874 to 431,836. In recognized institutions for men the increase was 11,620, and in those for women it was 2,912. In unrecognized institutions the total number increased from 6,936 to 9,366. The number of unrecognized institutions increased

by 49 and that of recognized institutions by 12. The total expenditure on education in the Province increased from Rs. 1,11,38,879 to Rs. 1,14,61,089. Towards the year's total expenditure Rs. 66,73,987 were contributed from provincial revenues. Progress took place in connection with University and collegiate education during the year. At the University, extension lectures were resumed, and 8 lectures were delivered by 4 eminent persons from different Provinces. The strength of the University Training Corps, which came into existence in 1928, amounted to 221. The total receipts of the University were Rs. 1,14,927, exclusive of the opening balance and nominal items, and towards this sum the Government contributed Rs. 50,000. An appreciable development occurred in the work of the Students' Information Bureau and the total number of applications and enquiries increased from 41 to 103. The number of students in colleges rose from 1,557 to 1,645 and the number of women students from 25 to 33. The new buildings of the Science College, Nagpur, constructed at a total cost of Rs. 13,05,000, were completed during the year. Turning now to secondary education, the number of high schools increased from 48 to 53, and the number of pupils in high school classes from 5,172 to 5,822. The total number of Anglo-vernacular middle schools and middle departments of high schools rose from 160 to 175 and the number of pupils in them from 24,827 to 26,854. The total expenditure on Anglo-vernacular schools amounted to Rs. 17,16,860, which represented an increase of Rs. 80,345 over that of the previous year. Towards this total the Government contributed Rs. 8,36,326. Out of the sanctioned *cadre* of 294 graduate and 340 under-graduate teachers in Government schools, 254 and 327 respectively were trained, while out of 132 and 445 teachers in aided high and middle schools respectively 46 and 118 were trained. The number of vernacular middle schools increased during the year from 354 with 67,070 pupils to 357 with 68,382 pupils. There were indications that the popularity of vernacular middle schools depends on the provision of facilities for teaching English; 125 vernacular middle schools taught optional English to 5,479 pupils during the year, against 108 schools and 5,311 pupils during the previous year. As regards primary education, the number of recognized primary schools decreased from 4,193 to 4,161, while the enrolment increased from 276,778 to 283,992. Out of 9,469 teachers in board schools 4,854 were trained and 4,615 untrained,

while in aided schools only 152 were trained out of a total of 507. The condition of vernacular school buildings was far from satisfactory, despite the fact that the Government gave a grant of Rs. 8 lakhs in 1926-27 to various local bodies for their improvement. During the year a further building grant of Rs. 5¼ lakhs was made, but unfortunately it did not appear to be used to the best advantage. The administration of compulsory education was also unsatisfactory. Reluctance to resort to prosecution was marked, and attendance officers appeared to be either too soft-hearted and negligent or else afraid of incurring unpopularity. During the year the Central Provinces Primary Education Act was amended to compel local authorities to introduce compulsion if the Government thought it necessary. As regards education for Indian girls, the total number of recognized schools increased during the year from 388 to 407, and the enrolment from 27,395 to 30,434. The total expenditure on girls' schools increased from Rs. 5,57,026 to Rs. 5,66,420. The number of women students in colleges was 33, of whom 28 were in the Morris College at Nagpur. The number of vernacular middle schools remained stationary at 40, but the enrolment increased from 4,837 to 5,243. The number of primary schools increased from 326 to 342, and the number of pupils from 21,015 to 23,520. The lowest classes continued to show numbers disproportionate to those in the higher classes. Out of a total number of 955 teachers in primary schools 475 were trained. A sum of Rs. 20,000 was allotted for the extension and improvement of girls' schools in the Province. The number of girls in boys' vernacular schools increased from 15,026 to 16,581, and a sum of Rs. 5,512 was distributed to headmasters for encouraging the attendance of girls in boys' schools.

The outstanding event of the year in the Madras Presidency was the establishment of a new University at Chidambaram known as the Annamalai University. A contribution of Rs. 27 lakhs was paid to it during the year under review from provincial funds. The total number of public educational institutions rose during the year from 53,625 to 56,013, and their enrolment from 2,586,544 to 2,729,237. There was, however, a considerable fall in the number and strength of private institutions. The total combined increase in the number and enrolment of public and private institutions was 1,823 and 132,084 respectively. The percentage of those under instruction to the total population was 6·6 as compared with

6·2 in the previous year. As regards University and collegiate education, there were few important events during the year apart from the creation of the new Annamalai University. In Madras University the courses in medicine were improved and revised, and a course for the degree of Bachelor of Commerce was instituted. Each college in the University was required to depute a graduate to the Y.M.C.A. National School of Physical Education to undergo training for nine months. The Andhra University Act was amended during the year with a view to making Vizagapatam the University headquarters. Turning now to secondary education, the number of public schools for Indian boys increased from 526 to 528. 12 new secondary schools were opened, 8 were closed, and 2 were reduced to the primary grade. The total number of pupils in them rose from 165,493 to 169,844. The number of girls reading in these schools was 3,113. An interesting event of the year was the order passed by the Government that grants from public funds should be withheld from educational institutions which refused admission to pupils belonging to particular castes or communities. The total expenditure on secondary schools for Indian boys rose from Rs. 74·36 lakhs to Rs. 79·22 lakhs, to which public funds contributed 32 per cent. The number of public elementary schools for boys in the Presidency increased during the year from 48,407 to 50,096 and their enrolment from 2,094,138 to 2,193,845. The percentage of male pupils to the total male population was 9·6 as against 8·7 in the previous year. The total number of teachers employed in public schools rose from 87,978 to 91,762, while the number of trained teachers among them increased from 43,002 to 45,538. Sanction was accorded during the year for the opening of 687 board elementary schools for boys, involving an annual recurring expenditure of Rs. 1,97,316 in school-less centres with a population of 500 or more. A satisfactory feature of the year was the substantial increase in the number of students undergoing training in the Government training schools, which rose from 7,290 to 8,737. The number of institutions solely intended for the instruction of Indian girls rose during the year from 4,278 to 4,938 and their strength from 280,200 to 315,701. There were 635,207 girls attending all grades of institutions as compared with 585,339 in the previous year. The number of Arts Colleges for women remained stationary, but the number of pupils in them decreased from 421 to 376; there was

however an increase from 84 to 112 in the number of women students reading in Arts Colleges for men. The number of women reading in the medical colleges rose from 62 to 74. During the year there were 67 secondary schools for girls with a strength of 14,556. The number of elementary schools for girls rose from 4,044 to 4,722, and their strength from 260,390 to 294,678. The number of girls reading in boys' schools increased from 302,080 to 318,156. The total number of training schools for women under all managements was 50 as against 41 in the previous year. The total expenditure on education in the Presidency rose from Rs. 478·91 lakhs to Rs. 545·75 lakhs, and the proportion which public and private funds bore to total expenditure was 63 and 37 per cent. respectively.

In the North-West Frontier Province the total number of educational institutions of all kinds rose from 1,118 to 1,151, and the increase would have been larger had not the number of unrecognized schools declined from 275 to 238. The total number of pupils rose from 76,756 to 82,152. The percentage of male pupils to the total male population rose from 5·6 to 5·9 and that of female pupils to the total female population remained at ·8. The percentage of boys in schools to the male population of school-going age was 39·7 as compared with 37·2 in the previous year, while the corresponding figures for girls were 5·9 and 5·4. The total expenditure on education rose from Rs. 24,12,151 to Rs. 26,16,988. Most of the increase was due to the larger grants made from provincial revenues in connection with the special five years' expansion programme which is in operation. The amount of grants during the year under review was Rs. 17,33,694 as against Rs. 15,96,161 in the previous year. As regards collegiate education, the expansion was rapid, there having been an increase of over 20 per cent. in the enrolment. The Islamia College, whose finances had recently been the subject of an enquiry, was put on a firm footing and its development seems assured for some years ahead. The total expenditure on all the three colleges in the Province was Rs. 1,91,497, which is slightly less than that of the previous year. In secondary education also there was considerable improvement; the number of pupils in high and Anglo-vernacular middle schools increased from 13,866 to 14,143. In vernacular secondary education the advance continues to be particularly rapid, the total enrolment in schools of this type having been 20,355 as

against 16,100 in the previous year. The number of high schools rose from 26 to 27 but that of vernacular middle schools increased from 106 to 144. These figures indicate that a satisfactory broadening of the foundations of the educational structure is taking place. As regards primary education, the number of schools increased from 601 to 621, and the number of pupils attending them from 32,575 to 33,556. This increase is satisfactory when the fact is recalled that several flourishing primary schools had recently been raised to the middle school level and their places taken by entirely new establishments. The problem of educational wastage or stagnation between classes continues to engage serious attention, though it is of course very far from being a defect confined to this Province alone. Despite the various expedients that have been tried, the problem remains substantially unsolved and the strength of the lower or infant section is still about 50 per cent. of the total. In female education considerable progress continues to be made. The number of institutions only increased from 117 to 120 but that of pupils rose by as much as 10 per cent. and now totals 9,020.

In the Punjab, for the first time since 1917, there was a fall in the number of schools and of pupils, institutions having decreased by 960 to 18,100 and pupils by 27,362 to 1,220,769. In the percentage of children under instruction to the total population there was also a decline, the figures having amounted to 5·90 as compared with 6·04; the percentage for boys stood at 9·41 as against 9·77 in 1928, but that for girls increased from 1·53 to 1·67. The total expenditure from various sources amounted to Rs. 3,02,10,555, which represented an increase of Rs. 5,71,280 over the figure of the preceding year; 55·95 per cent. of the cost was borne by provincial revenues. The decrease in enrolment was ascribed partly to the closure of a considerable number of comparatively inefficient schools for adults, and partly to a certain slackening which was observed in the work of the inspecting staff in carrying on propaganda. The Royal Commission on Agriculture, in its Report, commented favourably upon the rapid development of lower middle schools in the Punjab, which enabled the Province to educate nearly 50 per cent. of the pupils in the primary stage in these higher grade schools; and during the period under review the number of boys enrolled in primary classes of secondary schools increased still further and amounted to 383,430 as against 359,844. Another noteworthy feature of the year was the increased enrol-

ment in the upper classes at the primary stage. Considerable progress continued to be made in the elimination of the inefficient and wasteful one-teacher school. The number of municipal and rural areas in which compulsion had been introduced increased during the year and amounted to 2,082. No particularly noteworthy events took place during the year in connection with University and collegiate education. A conspicuous feature in the development of secondary education during the year was the great improvement in the qualifications of teachers, the percentage of trained men having increased from 70 to 75. The total number of female pupils in the educational institutions of the Province increased during the year from 93,991 to 102,032.

In the United Provinces there was an increase of 505 in the number of recognized institutions, and a decrease of 54 in the number of unrecognized institutions,—owing partly to the recognition of some of the latter. The total number of students increased by over 57,000 to 1,491,483, but the rate of increase is diminishing. The percentage of scholars to the total population increased slightly to 3·28 per cent. The expenditure on education in the Province during the year was Rs. 375·93 lakhs, of which 56 per cent. was contributed by the Government. This sum was Rs. 22 lakhs higher than the expenditure for the previous year, which in turn was Rs. 16¼ lakhs higher than that for 1926-27. As regards University and collegiate education, the total enrolment in the 5 Universities in the Province increased by 391 to 6,995 and the total expenditure amounted to Rs. 39·18 lakhs, of which just over half was met from Government funds. In Chapter VIII we have already given a brief account of the events of the year at two of these Universities, namely those at Aligarh and Benares. As regards Allahabad University, the enrolment increased by 143 to 1,443, the number of students during the last five years having doubled. Research work in all departments extended during the year. The Botany and Zoology buildings were added to, but the Library, in which there are now over 72,000 volumes, is in need of extra accommodation. The University Union was revived after three years of inaction. A Village Services League and Study Circles in literature, political science, present day problems and general science were started. At Lucknow University the enrolment increased from 1,530 to 1,619. The chemistry block was completed and the accommodation thus set free will be used by the English

department. Harmony was restored between Muslim and Hindu students, with the result that the University Union enjoyed a successful year. The University training Corps continued to be popular and the number of undergraduates undergoing physical training increased considerably. The year under review was but the second since the creation of Agra University, but the number of students on the rolls amounted to 1,743. Considerable progress was made with the framing of statutes and regulations. Turning now to secondary education, the number of schools in the Province rose from 909 to 994 during the year, and the enrolment from 146,554 to 158,709. Expenditure increased from Rs. 73·87 lakhs to Rs. 78·98 lakhs of which 52·9 per cent., as compared with 53·7 per cent. in the previous year, was met from provincial funds. The demand for increased facilities for English education does not abate, and the number of institutions devoted to it increased by 7 to 278, and the enrolment from 77,635 to 82,612. The number of intermediate colleges increased from 28 to 29, and the enrolment from 4,199 to 4,376. The increase in the number of high and middle schools amounted to 6 only, but the enrolment rose by approximately 5,000. The percentage of trained teachers increased slightly, but is still very small. The number of vernacular middle schools rose during the year from 638 to 666 and enrolment from 68,919 to 76,097. The average enrolment per school increased from 108 to 114. As regards primary education, the total number of schools amounted to 20,013, as compared with 19,624 in the previous year, and the enrolment to 1,139,971 as against 1,099,307. Expenditure rose from Rs. 80·30 lakhs to Rs. 84·16 lakhs, towards which the Government contributed Rs. 58·95 lakhs. Unfortunately the percentage of trained teachers decreased, being 63 per cent. as compared with 65 per cent. in the previous year. A satisfactory feature however was that 5 Municipal Boards introduced compulsory education during the year. It was reported that the buildings continued to be in a deplorable condition and that some District Boards did not immediately use the grants made for the purpose of improving them by the Government. At the Government training college at Allahabad there were 66 students as compared with 63 in the previous year. The enrolment at the Benares, Agra, Lucknow, and Aligarh training colleges were respectively 48, 55, 55, and 57. 8 candidates from the Isabella Thoburn College at Lucknow sat for the degree of Bachelor of Teaching at Lucknow University and all

passed. The total number of institutions in the Province for the education of girls increased from 2,077 to 2,160, of which 217 were unrecognized. Enrolment rose from 86,202 to 90,044, and expenditure from Rs. 15·10 lakhs to Rs. 16·56 lakhs. Of this sum the Government contributed Rs. 7·91 lakhs.

APPENDIX I.

REPRESENTATIVE LIST OF OFFICIAL REPORTS, ETC.

(Mostly annual.)

General.

Statistical Abstract for British India.
Census Reports (decennial).
Administration Reports: Madras, Bombay, United Provinces, Punjab, Bengal, Central Provinces and Berar, Burma, Bihar and Orissa, Assam, North-West Frontier Province, Delhi, Coorg, Andaman and Nicobar Island, Civil and Military Station of Bangalore, Ajmer-Merwara, Baluchistan Agency.

Agriculture and Veterinary.

Review of Agricultural Operations in India.
Report of the Agricultural Research Institute and College, Pusa.
Bulletins of the Department of Agriculture in India.
Proceedings of the Board of Agriculture.
Agricultural Journal of India (quarterly).
Report of the Department of Agriculture for each Province.
Season and Crop Report for each Province.
Agricultural Statistics of India.
Area and Yield of certain Principal Crops.
Report of the Civil Veterinary Department for each Province.
Report of the Imperial Bacteriologist (Veterinary).
Journal of the Central Bureau for Animal Husbandry and Dairying in India.

Co-operative Societies.

Statistical Statements relating to Co-operative Movement in India.
Report on Co-operative Societies for each Province.
Reports of Conferences of Registrars of Co-operative Societies.

Education.

Education Reports for India and each Province.
Quinquennial Review of Education.

Emigration and Immigration.

Annual report on the working of the Indian Emigration Act of 1922 and the Rules framed thereunder in the Presidency of Bengal.
Annual Report on the working of the Indian Emigration Act in the Bombay Presidency.
Annual Report on the working of the Indian Emigration Act and the rules framed thereunder in the Madras Presidency.
Annual Report of the Agent of the Government of India in South Africa.
Annual Report of the Agent of the Government of India in British Malaya.
Annual Report of the Agent of the Government of India in Ceylon on the working of the Indian Emigration Act, the Rules issued thereunder and of the Labour Ordinances of Ceylon.

Reports on Immigrants Labour in the Province of Assam.

Annual Report on Emigration to the Labour Districts of Assam, Cachar and Sylhet.

Finance.

Budget of the Government of India.

Finance and Revenue Accounts of the Government of India.

East India Accounts and Estimates: Explanatory Memorandum by the Secretary of State for India (Parliamentary Paper).

Home Accounts of the Government of India (Parliamentary Paper).

East India (Loans raised in England) (Half-yearly Parliamentary Paper).

Reports on the Administration of the Mints at Calcutta and Bombay, with a review by the Controller of the Currency.

Report of the Controller of the Currency.

Forests.

Annual Return of Statistics relating to Forest Administration in British India.

Report on Forest Administration for each Province.

Reports of the Forest Research Institute and the Imperial Forest College, Dehra Dun.

Quinquennial Forest Review.

Indian Forest Memoirs.

Indian Forest Records.

Forest Bulletins.

Justice and Police.

Report on the Administration of Civil Justice for each Province.

Report on the Administration of Criminal Justice for each Province.

Report on Jails for each Province.

Report on Police for each Province, and for Bombay Town and Island, Calcutta and Rangoon.

Land Revenue, etc.

Land Revenue Administration: Provincial Reports for Bengal, Bihar and Orissa, Assam, United Provinces, Bombay Presidency (including Sind), Punjab, Central Provinces and Berar, Burma, and Madras.

Report on Land Revenue Administration, Land Records, Settlement Operations, Alienation of Land Act, etc., for North-West Frontier Province.

Madras Survey, Settlement and Land Records Department Report.

Reports of Land Records Departments for Bombay, Burma, Bengal, United Provinces, and Punjab.

Report on Settlement Operations, Punjab.

Reports on Survey and Settlement Operations, Bengal, Bihar and Orissa, and Assam.

Reports on Operations of the Land Records and Settlement Departments, Central Provinces and Berar.

Report of the Talukdari Settlement Officer, Bombay.

Provincial Reports on the Administration of Estates under the Court of Wards.

Report on the Punjab Canal Colonies.

Legislation.

Acts of the Indian Legislature and Provincial Legislative Councils.

Official Accounts of the Debates and Proceedings in the Central and Provincial Legislatures.

Local Self-Government.

Report on Municipalities for each Province and for Calcutta, Bombay City, Madras City and Rangoon.

Reports on District and Local Boards for each Province.

Reports of Ports Trusts of Calcutta, Bombay, Madras, Rangoon, Karachi and Aden.

Administration Report of the Chittagong Port Commissioners.

Medical, Public Health, and Vital Statistics.

Report of the Public Health Commissioner with the Government of India.

Report of the Director of Public Health for each Province.

Report on Civil Hospitals and Dispensaries for each Province.

Report on Mental Hospitals for each Province.

Report of the Chemical Examiner and Bacteriologist for each Province.

Indian Journal of Medical Research (Quarterly).

Indian Medical Research Memoirs (supplementary to the Indian Journal of Medical Research), issued periodically.

Records of the Malaria Survey of India issued by the Director, Malaria Survey of India.

Mineral Production and Inspection of Mines.

Review of Mineral Production (in Records of Geological Survey).

Report on Production and Consumption of Coal in India.

Report of the Chief Inspector of Mines.

Posts and Telegraphs.

Report on the Posts and Telegraphs of India.

Report of Indo-European Telegraph Department.

Prices and Wages.

Prices and Wages in India (tables).

Variations in Indian Price Levels (tables).

Reports of Provincial Wage Censuses.

Public Works.

Report by the Railway Board on Indian Railways.

History of Indian Railways constructed and in progress.

Reports on Public Works (Buildings and Roads) for Madras, Bombay, the United Provinces, the Punjab, Bihar and Orissa, the Central Provinces, Assam, and the North-West Frontier Province.

Review of Irrigation in India.

Administration Reports on Irrigation for each Province (except Assam).

Revenue (other than Land Revenue).

Salt Department Reports: Northern India, Madras, Bombay, Sind, Bengal, Burma, Bihar and Orissa.
Excise Report for each Province.
Report on the Operations of the Opium Department.
Stamp Department Report for each Province.
Registration Department Report for each Province.
All-India Income-Tax Report and Returns.

Scientific Departments.

Survey of India, General Report.
Records of the Survey of India.
Map Publication and Office Work Report.
Geodetic Report.
Report and Records of the Botanical Survey.
Records and Memoirs of the Geological Survey of India.
Reports, Memoirs, etc., of the Archæological Survey.
Report on the Administration of the Meteorological Department of the Government of India.
Scientific Notes of the Indian Meteorological Department.
Memoirs of the Indian Meteorological Department.
Report of the Meteorologist, Calcutta.
Annual Report of the Kodaikanal Observatory.
Memoirs and Bulletins of the Kodaikanal Observatory.
Indian Weather Review, Annual Summary.
Rainfall Data of India.

Trade and Manufactures.

Annual Statements of the Sea-borne Trade of British India, Volumes I and II.
Provincial Annual Statements of the Sea-borne Trade and Navigation (Madras, Bombay, Sind, Bengal and Burma).
Review of the Trade of India.
Provincial Reports on Maritime Trade and Customs (including working of Merchandise Marks Act) for Bengal, Bihar and Orissa, Bombay, Sind, Madras and Burma.
Review of the Customs Administration in India.
Accounts relating to the Sea-borne Trade and Navigation of British India (monthly and for calendar year).
Statements of Trade at stations adjacent to Land Frontier Routes (monthly).
Indian Trade Journal (Weekly).
Report on Joint Stock Companies in British India and the Indian States of Mysore, Baroda, Gwalior, Hyderabad, Indore and Travancore.
Report on the Working of the Indian Companies Act for each Province.
Indian Customs Tariff Schedules.
The Indian Insurance Book.
Statistics of Factories for the year 1928 together with a note on the working of the Indian Factories Act, 1911, during that year.

Workmen's Compensation Statistics for the year 1928, together with a note on the working of the Workmen's Compensation Act, 1923, during that year.
Statistical table relating to strikes for the year ending the 31st March 1930.
The Government of Bombay's "Report of the Court of Enquiry, 1929".
The Government of India's "Report of the Board of Conciliation, 1930".
The Bulletin of Indian Industries and Labour No. 43 relating to the Industrial disputes in India for the years 1921-28.
The Bulletin of the Indian Industries and Labour No. 44 relating to the twelfth International Labour Conference.
Report of the Chief Inspector of Explosives.
Labour Gazette published monthly by the Labour Office, Government of Bombay.
Report of the Department of Industries for each Province.
Administration Report of the Indian Stores Department.
Report on the work of the Indian Stores Department, London.

APPENDIX II.

Statement by His Excellency the Viceroy in the Gazette Extraordinary of the 31st of October 1929.

I have just returned from England where I have had the opportunity of prolonged consultation with His Majesty's Government. Before I left this country I said publicly that as the King-Emperor's representative in India I should hold myself bound to tell my fellow-countrymen, as faithfully as I might, of India's feelings, anxieties and aspirations. In my endeavours to discharge that undertaking I was assisted by finding, as I had expected, a generous and sincere desire, not only on the part of His Majesty's Government but on that of all persons and parties in Great Britain, to hear and to appreciate everything that it was my duty to represent.

These are critical days, when matters by which men are deeply touched are in issue and when, therefore, it is inevitable that political feeling should run high, and that misunderstandings, which would scarcely arise in conditions of political tranquillity, should obtain firm foothold in men's minds. I have, nevertheless, not faltered in my belief that behind all the disquieting tendencies of the time, there lay the great mass of Indian opinion, overflowing all divisions of race, religion, or political thought, fundamentally loyal to the King-Emperor, and, whether consciously or not, only wanting to understand and to be understood. On the other side I have never felt any doubt that opinion in Great Britain, puzzled as it might be by events in India, or only perhaps partially informed as to their true significance, was unshaken in its determination that Great Britain should redeem to the full the pledges she has given for India's future. On both countries the times have laid a heavy and in some ways a unique responsibility, for the influence on the world of a perfect understanding between Great Britain and India might surely be so great that no scales can give us the measure either of the prize of success or, the price of failure in our attempts to reach it.

In my discussions with the Prime Minister and the Secretary of State, it was inevitable that the principal topic should have been the course of events in India. It is not profitable on either side to discuss to what extent, or with what justification, the appointment of a Parliamentary Commission two years ago has affected the general trend of Indian thought and action. Practical men must take facts and situations as they are, and not as they would have them be.

Sir John Simon's Commission, assisted as it has been by the Indian Central Committee, is now at work on its Report, and until that Report is laid before Parliament it is impossible, and even if it were possible, it would in the view of His Majesty's Government clearly be improper, to forecast the nature of any constitutional changes that may subsequently be proposed. In this respect every British party is bound to preserve to itself complete freedom of action. But what must constantly engage our attention, and is a matter of deep concern to His Majesty's Government, is the discovery of means by which, when the Commission has reported, the broad question of British Indian constitutional advance may be approached in co-operation with all those who can speak authoritatively for opinion in British India. I would venture to recall some words which I used in addressing the Assembly eight months ago in a reference to the then existing political situation.

"On the one side," I said, "it is as unprofitable to deny the right of Parliament to form its free and deliberate judgment on the problem as it would be shortsighted of Parliament to undertake the importance of trying to reach a solution which might carry the willing assent of political India." We shall surely stray from the path, at the end of which lies achievement, if we let go either one or other of these two main guiding principles of political action.

But there has lately emerged, from a totally different angle, another set of considerations which is very relevant to what I have just stated on this matter to be the desire of His Majesty's Government.

The Chairman of the Commission has pointed out in correspondence with the Prime Minister, which, I understand, is being published in England, that as their investigation has proceeded, he and his colleagues have been greatly impressed, in considering the direction which the future constitutional development of India is likely to take, with the importance of bearing in mind the relations which may, at some future time, develop between British India and the Indian States. In his judgment it is essential that the methods, by which this future relationship between these two constituent parts of Greater India may be adjusted, should be fully examined. He has further expressed the opinion that if the Commission's Report and the proposals subsequently to be framed by the Government take this wider range, it would appear necessary for the Government to revise the scheme of procedure as at present proposed. He suggests that what might be required, after the Reports of the Statutory Commission and the Indian Central Committee have been made, considered and published, but before the stage is reached of the Joint Parliamentary Committee, would be the setting up of a Conference in which His Majesty's Government should meet representatives both of British India and of the States, for the purpose of seeking the greatest possible measure of agreement for the final proposals which it would later be the duty of His Majesty's Government to submit to Parliament. The procedure by Joint Parliamentary Committee conferring with delegations from the Indian Legislature and other bodies, which was previously contemplated and is referred to in Sir John Simon's letter to myself of 6th February 1928, would still be appropriate for the examination of the Bill when it is subsequently placed before Parliament, but would, in the opinion of the Commission, obviously have to be preceded by some such Conference as they have suggested.

With these views I understand that His Majesty's Government are in complete accord. For, while they will greatly desire, when the time comes, to be able to deal with the question of British Indian political development under conditions the most favourable to its successful treatment, they are, with the Commission, deeply sensible of the importance of bringing under comprehensive review the whole problem of the relations of British India and the Indian States. Indeed, an adjustment of these interests in their view is essential for the complete fulfilment of what they consider to be the underlying purpose of British policy, whatever may be the method for its furtherance which Parliament may decide to adopt.

The goal of British policy was stated in the declaration of August 1917 to be that of providing for the gradual development of self-governing institutions, with a view to the progressive realisation of responsible Government in India as a integral part of the British Empire. As I recently pointed out, my own Instrument of Instruction from the King-Emperor expressly states that it is His Majesty's will and pleasure that the plans laid by Parliament in 1919 should be the means by which British India may attain its due place among His Dominions. Ministers of the Crown, moreover,

have more than once publicly declared that it is the desire of the British Government that India should, in the fullness of time, take her place in the Empire in equal partnership with the Dominions. But in view of the doubts which have been expressed both in Great Britain and India regarding the interpretation to be placed on the intentions of the British Government in enacting the Statute of 1919, I am authorised on behalf of His Majesty's Government to state clearly that in their judgment it is implicit in the declaration of 1917 that the natural issue of India's constitutional progress, as there contemplated, is the attainment of Dominion status.

In the full realisation of this policy, it is evidently important that the Indian States should be afforded an opportunity of finding their place, and even if we cannot at present exactly foresee on what lines this development may be shaped, it is from every point of view desirable that whatever can be done should be done to ensure that action taken now is not inconsistent with the attainment of the ultimate purpose which those, whether in British India or the States, who look forward to some unity of All-India, have in view.

His Majesty's Government consider that both these objects, namely, that of finding the best approach to the British Indian side of the problem, and secondly, of ensuring that in this process the wider question of closer relations in the future between the two parts of Greater India is not overlooked, can best be achieved by the adoption of procedure such as the Commission has outlined. When, therefore, the Commission and the Indian Central Committee have submitted their Reports and these have been published, and when His Majesty's Government have been able, in consultation with the Government of India, to consider these matters in the light of all the material then available, they will propose to invite representatives of different parties and interests in British India and representatives of the Indian States to meet them, separately or together as circumstances may demand, for purpose of conference and discussion in regard both to the British-Indian and the All-Indian problems. It will be their earnest hope that by this means it may subsequently prove possible on these grave issues to submit proposals to Parliament which may command a wide measure of general assent.

It is not necessary for me to say how greatly I trust that the action of His Majesty's Government may evoke response from and enlist the concurrence of all sections of opinion in India, and I believe that all who wish India well, wherever and whoever they are, desire to break through the webs of mistrust that have lately clogged the relations between India and Great Britain. I am firmly assured that the course of action now proposed is at once the outcome of a real desire to bring to the body politic of India the touch that carries with it healing and health, and is the method by which we may best hope to handle these high matters in the way of constructive statesmanship.

IRWIN,

Viceroy and Governor General.

31st October 1929.

APPENDIX III.

Extracts from the Speech made by His Excellency the Commander-in-Chief in the Council of State on the 6th of March 1930.

H. E. THE COMMANDER-IN-CHIEF: "Sir, it is by no means the first time and I am quite convinced that it will not be the last time when we shall hear violent attacks made at the figure at which the Military Budget stands. As far as I can gather, those attacks have been nearly always based on the fact that in the Report of the Inchcape Committee a certain figure was mentioned;—the figure of 50 crores; but people who have attacked the figure of the Military Budget because it exceeds 50 crores cannot, I think, have really read the Report carefully or realised what the Inchcape Committee meant when they quoted that particular figure. I have myself on more than one occasion endeavoured to point out what the Inchcape Committee then meant, but I am sorry to say that what I have said has never had the slightest effect. It has now again been referred to as a definite fact that the Inchcape Committee recommended that army expenditure should not exceed 50 crores. What actually happened—I will repeat again—was this. When the Inchcape Committee sat and made their recommendations, the Army Budget figure stood at 57·75 crores. The Committee recommended that the estimates for that year should be reduced to 57 crores. They went on to make the statement:—

'We do not, however, consider that the Government of India should be satisfied with a military budget of 57 crores and we recommend that a close watch be kept on the details of military expenditure with the object of bringing about a progressive reduction in the future . . . .'

These are the words that I should particularly like to emphasise—

'Should a further fall in prices take place, we consider that it may be possible . . . after a few years to reduce the military budget to a sum not exceeding 50 crores, although the Commander-in-Chief does not subscribe to this opinion.'

The Commander-in-Chief, I need hardly mention, was the late Lord Rawlinson. Now, Sir, since those days it was decided to commercialise the army, and among other things, the Army Budget had to undertake expenditure of 45·64 lakhs for items which previously had been charged to other Departments, such as 32·45 lakhs customs duty, and 13 lakhs for printing, stationery, etc. Those, I say, were charges which we had not met from the Army Budget in days gone by. Since the recommendations were made by the Inchcape Committee, these items are charged to the Army Budget, and, as you see, they come to 45·64 lakhs. In addition . . . out of the Army Budget certain very considerable sums are returned to Government. From the Army Budget a sum of one crore is returned in the shape of customs duty, income-tax on officers' pay and other central taxes. In addition to that, there is a further sum of 180 lakhs which is debited to the Army Budget for services rendered by other departments, such as railway transport charges, posts and telegraphs, etc. . . . Those figures alone will show that the Army has to meet comparatively very large charges which in previous years were not met from our Army Budget. Now, Sir, the point

want to emphasise from that part of the recommendation of the Inchcape Committee is 'if prices fall'. I have got the figures here of the prices in the year 1923-24 . . . These are the prices of the chief items necessary for the feeding of men and animals; such things as wheat, ghee, barley and gram and also our stores generally . . . In 1923-24 the figure for those was 1·35 crores. In 1928-29 it was 1·718 crores. That you will see is a considerable increase on 1923-24. In 1929-30 it was 1·68 crores, a fall from 1·718 of the previous year. The actual fall you will see is not very great. But what I really want you to keep in mind is this—and I cannot help thinking that the Inchcape Committee themselves never realised—that the total sum which we expend over supplies and stores of all sorts is about 10 crores only. It must obviously have been utterly impossible to hope to save 7 crores within that figure and yet that was the recommendation of the Committee—that should prices fall, the Army Budget could be reduced by 7 crores. The whole figure available for reduction was only 10 crores, and that is a point I cannot think they ever recognised when making such a recommendation. . .

"In spite of . . . the extra charges we have had to meet, and in spite of there being no real reduction in charges for supplies, our expenditure has been progressively reduced from 65·26 at which it stood in 1923 to 54·35 now, and the Honourable the Finance Member told us the other day that it is quite certain that there will be a very substantial reduction at the end of the stabilised period. . . What I think you might perhaps bear in mind—and I can say with absolute truth—is that when the time comes, in fact even at the present time the Army in India is in a more efficient state for mobilisation than I believe it has ever been in before. We have during this period made provision for re-equipment necessitated by the Inchcape recommendation, the growth of mechanisation and the replacement of obsolete aircraft. As a result we certainly shall be able to mobilise much more readily than we were able to do in days gone by. . .

"Well, Sir, in addition to what I have said about military expenditure, there is only one other point upon which I will touch. My friend, Mr. Chari, when talking about what is known as the Skeen Committee's Report, I think. . . . used the words. . . . 'had been unanimously turned down'. By 'unanimously' I gather that he meant to say, that . . . the Committee's recommendations had been altogether turned down. Well, Sir, I cannot allow a remark like that to go by unchallenged, because it . . . is the reverse of what has happened . . . With two exceptions the Government of India accepted the recommendations made by the Skeen Committee. We at once agreed to increase the number of cadets for Sandhurst in accordance with the recommendations made by the Committee. We opened the Air Force College at Cranwell and we opened the R. M. A., Woolwich, for Artillery and Royal Engineer officers . . . There were several other items which we also accepted. The only two points which I think we did not accept were (1) the recommendation for Sandhurst to be established in India by the year 1933. But we are only in 1930 now; so even had we accepted that recommendation there and then, you will see that the college itself was not proposed to be started till 1933. The other recommendation which we did not accept was the abolition of the system of what is known as the 8-unit scheme or the scheme for the Indianisation of 8 units. As regards the former, we stated that we did not feel confident that the number of cadets coming forward for Sandhurst could be relied upon as being sufficient, in quality and quantity, to justify us in undertaking the very heavy expenditure which would necessarily be involved in starting a college out here, with possibly a very small number of boys and a very

large, staff . . . as long as Sandhurst could take and would take, . . . larger proportion of our boys than they had done heretofore; and realising the excellent education there, we felt that our boys from here would receive the best education possible while at Sandhurst. The other point which certainly did affect us very much was the expenditure there. I think you all probably know that I am a very old Indian soldier and I believe there is no one here who has a great sympathy with or more real affection for my Indian comrades than I have—men to whom I am devoted for I well know their loyalty and courage. I say that in no boasting spirit, but simply because I have been very intimately associated with the Indian soldier for the last 45 years and it has been a source of real grief to me when any of my Indian officers have come to me and complained that the expenditure involved in sending a boy to Sandhurst has made it almost impossible to do so. In the necessity of rectifying this the Government entirely agreed and as a result we decided, that in the case of any boys going to Sandhurst, the parents of those boys should receive a cash grant and equipment, amounting to what we consider the difference between the cost of education in this country and the education at Sandhurst. That has been done in all cases, and we feel that having done that, we have to a great extent met one of the very strong points put forward by the Committee to start an Indian Sundhurst. The other points which I say we did not accept was the abolition of what is known as the 8-unit scheme. That scheme, as you all know, was started by my very distinguished predecessor. He, I think, had been pressed time after time to give a date when he could say that Indianisation could be effected. His reply was, that as long as the young boys coming out from Sandhurst were scattered all over the Indian Army, it must be impossible for very many years to come to judge as to their complete efficiency. But if we got particular units which would be officered entirely by these young Sandhurst boys who would rise in rank *pari passu* with British boys of their own standing—then when the time came for these to exercise the command, we should definitely be able to say whether Indianisation was a success or not. It was for that reason that we decided that we must give a fair trial to the system which had been in force for only a very few years and which had received the approval of His Majesty's Government."

Extracts from the Speech made by the Secretary to the Army Department, Mr. G. M. Young, C.I.E., I.C.S., in the Legislative Assembly on the 8th of March 1930.

Mr. G. M. Young: "Sir, this debate has fallen . . . into two parts. That part of it which deals with general military policy has been restricted almost entirely to a discussion of military expenditure. The other part is the part, which came first in the motion, on the action, or, as the Honourable the Mover preferred to put it, in action, of the Government of India on the Indian Sandhurst Committee's Report. I will take that part of it first. Not only the Honourable the Mover, but several Honourable Members . . . have maintained that the Government have taken no action beyond entering into certain correspondence on the recommendations of that Committee. Now, as long as Honourable Members maintain that attitude in defiance of the facts, how can we reach any reasonable solution of the difficulty? . . . The first step was to increase the number of vacancies at Sandhurst to 20 a year, and to open Woolwich and Cranwell to Indian cadets, with a view to their becoming King's Commissioned officers in the

Engineers, Artillery and Air Force. . . . Honourable Members may call that nothing. But an average of 20 cadets a year is sufficient to keep going an establishment of 500 officers . . . whereas 12, or 15 years ago, there was not one. Honourable Members then go on to say . . . that, there are so many vacancies offered, and it will be a very distant date before they are increased . . . As a matter of fact, we made it perfectly clear that this original expansion is only as a start. The Indian Sandhurst Committee . . . added what they called a suggested scheme for expansion as an appendix to their Report. There they laid down, in advance, the amount of expansion year by year. The Government of India said, 'No, we cannot accept this time-table in advance; we must proceed upon established results'. Now, Sir, what have the results been? . . . The results of the last examination . . . are very promising. Until that examination, we had not had real competition; that is to say, no Indian candidate had ever qualified, and then failed to get a place because there were not enough vacancies. In the examination of last November, there were 69 . . . candidates, of whom 20 have obtained vacancies in the cadet colleges. That is, as I said, the first time that there was competition. Speaking the other day, my Honourable friend, Mr. Jinnah, enlarged upon the desirability of getting good competition. He said 'If you have 500 candidates for 20 or 30 vacancies, that is good. If you have 1,500 candidates for 20 or 30 vacancies, that is better still; that will be getting good competition'. We have not got as far as that, but we are on our way. . . . Before leaving the question of the expansion of the vacancies, I should like to mention, that, not only is it the declared policy of the Government of India to expand those vacancies when the time arises, but that policy was quite recently reaffirmed by the Secretary of State in his answer to the question asked by Lieutenant Commander Kenworthy.

"I now turn to the question of establishing an Indian military college. There again, in answer to the same question, the Secretary of State said that the question of training Indians in India for the King's Commission was under his consideration. I have frequently stated in this House that the establishment of an Indian military college will come, when the number and quality of the candidates coming forward justified it . . .

"Now I come to the one point on which it may fairly be said that the Government of India and His Majesty's Government have turned down the recommendations of the Indian Sandhurst Committee. That is, the so-called eight-units system, the principle of Indianising by units instead of Indianising by individual posts within the units. My Honourable friend, the Mover of this motion, argued that Dominion Status involves the creation of a Dominion army, and that that cannot be raised in a moment . . . But . . . the reason why we adopted the principle of the eight-units' scheme, instead of the recommendations of the Indian Sandhurst Committee, is that we are aiming at the creation of a Dominion army, which the recommendations of the Sandhurst Committee would not have achieved. The whole point of it is that you get Indian officers together in units, and get these units completely officered by Indians . . . If we had proceeded on the plan recommended by the Indian Sandhurst Committee, and reversed Lord Rawlinson's scheme of the eight-units . . ., by 1952 we should not be anywhere nearer knowing whether Indian officers can, unaided and unsupported by British officers, lead Indian troops, than we are to-day. By that time, you would have, it is true, half the officers of the Indian Army Indians; but they would have been distributed in exact proportion to the British officers throughout every unit in the Army. I do not know whether Honourable Members are aware of any army in the world that is officered

on a plan of this kind; I personally have never heard of one. The eight-units system was admittedly unpopular at the start. There is no doubt that those Indian officers who are in the Army—and there are still 36 of them in 28 units which are not Indianised units—disliked at the outset the eight-units' scheme. That is a matter on which we keep a very close eye and we are satisfied that the prejudice is to some extent lessening, and Indians are beginning to take pride in having their own units, as we foresaw they would. We all knew that the plan would be unpopular at the start; but in our opinion it was necessary, and it is now less unpopular.

"It has often been said, Sir, that the sole object of this measure was to prevent a deterioration in British recruitment . . . The unpopularity of the Indian Army among British recruits, which would have ensued if the Skeen Committee's recommendations had been accepted, has been attributed to racial arrogance, superiority complex, and all that sort of thing. As a matter of fact, Sir, it has nothing, so far as I know, to do with that. It is merely the natural desire of an officer to serve with his own kind. That very natural desire is not confined to British officers of the Indian Army; it exists all over the world . . . The same tendency is already to be found in our own Indianising units. We have had applications from members of one community or another to go to the unit which already contains the largest number of that community. . . .

"Sir, I now turn to the other division of this question, the retrenchment of military expenditure. We are almost tired of hearing that we have not given effect to the recommendations of the Inchcape Committee. We did give effect to them immediately, and reductions were effected which took us well below the figure recommended by the Inchcape Committee . . . Here again, we are not stationary; we are still moving. It has been suggested that the drop of 80 lakhs in military expenditure this year, . . . is not a true saving. My Honourable friend, Dr. Moonje, produced figures to show that if the ultimate figure falls to Rs. 50 crores, there will be no real saving. But I think he loses count of the fact that, by taking the drop now, and increasing the period of stabilization, we are facilitating a larger drop at the end of it than would otherwise be possible. There was one Honourable Member to-day who said, that, though military expenditure might not be going up, at any rate it is not falling. He did not use the formula that was used during the last few years, that military expenditure was going up by leaps and bounds. It is not doing that now, it is actually falling. I hope I shall not be tiring the patience of the House if I read some of the figures of military expenditure of other nations. In France, including the expenditure on air forces, in 1922-23 it was £39 millions; it has risen steadily until, in 1929, it is £64·6 millions. Germany only began military expenditure again in 1924 with a figure of £22·5 millions, which has now reached approximately £32 millions—an increase of £10 millions. The United States of America,—who are taking a lead with Great Britain in the naval disarmament campaign—their figures are distinctly instructive. Their expenditure in 1923 was £51·7 millions; in 1928 it was £59·3 millions; for 1929-30 the figure is £61·7 millions. That represents army expenditure only. The air force expenditure in the same period has risen from £2·76 millions to £7·2 millions; naval expenditure from £6·2 millions to £7·5 millions. Italy shows an increase from £18 millions in 1923 to £28·7 millions in 1929, but a decrease from £31·1 millions in 1928. At the same time, in air force expenditure, Italy has risen from £1·9 million to £7·6 millions; and in naval expenditure, from £6·1 millions to £13·3 millions. I come last to Russia. We have no figures for Russia before 1925 but Russian military expenditure in 1925, was £41·7 millions; now it is £85

millions, that is, the estimate for the ensuing year. We have often been told that Russian military expenditure is due to fear of Great Britain. These figures, of course, make that quite clear. Russia's expenditure has risen from £41·7 millions to £84 millions. Great Britain has reduced her expenditure from £51 millions to £40 millions, and India has reduced hers in the same period from Rs. 65 crores 26 lakhs to Rs. 54 crores and 35 lakhs.

Now, Sir, certain methods of retrenchment have been proposed by my Honourable friend Pandit Hirday Nath Kunzru, in the general discussion on the Budget. He . . . referred to the recommendation of the Inchcape Committee that the strength of Indian battalions should be reduced by, I think, 154 men . . . an immediate reduction since then . . . I do not think, Sir, that it would be worth while troubling the Honourable Members of this House with these tactical details, but it is a fact that the strength of the Indian infantry battalions . . . is now 728, whereas it used to be 826 before the Inchcape recommendations. That, Sir, is the furthest limit to which, in the opinion of the military authorities at the present time, it would be wise to reduce a battalion from a tactical point of view . . .

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